

Harriet Perry

**BLUE CRAB TECHNICAL TASK FORCE**

**MINUTES**

**January 19-22, 1999**

**Rockefeller Refuge, Louisiana**

Chairman Vince Guillory called the meeting to order on Monday, January 19, 1999, at 7:00 a.m. Draft sections were distributed, and the group recessed to a reading session until 9:00 a.m. The following were in attendance:

Members

- Vince Guillory, *Chairman*, LDWF, Bourg, LA
- Traci Floyd, MDMR, Biloxi, MS
- Leslie Hartman, ADCNR/MRD, Dauphin Island, AL
- Ed Holder, Groves, TX
- Walter Keithly, LSU, Baton Rouge, LA
- Butch Pellegrin, NMFS, Pascagoula, MS
- Harriet Perry, GCRL, Ocean Springs, MS
- John Petterson, IAI, La Jolla, CA
- Phil Steele, FDEP, St. Petersburg, FL
- Tom Wagner, TPWD, Rockport, TX

Staff

- Steve VanderKooy, Program Coordinator, Ocean Springs, MS
- Cindy Yocom, Staff Assistant, Ocean Springs, MS

Adoption of Agenda

The agenda was adopted by consensus.

Approval of Minutes

The minutes of the meeting held on October 12-13, 1998, in San Antonio, Texas, were reviewed. T. Wagner noted a correction on the Texas Limited Entry Overview; the percentage of cost is 20% rather than 25%. **P. Steele moved to adopt the minutes as corrected; L. Hartman seconded the motion which passed unanimously.**

Review of Section Progress

With the submission of the economics section by Walter Keithly, the draft FMP is complete. Using the computer projection unit, all sections were reviewed and edited. With the exception of section 3, electronic copies of the FMP reside at the GSMFC offices. The revised FMP will be redistributed to the task force early next week. Individual assignments must be completed and mark ups on the

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hard copy should be returned to GSMFC by Friday, January 29, 1999. The complete FMP will be distributed to the Technical Task Force on February 22, 1999.

**There being no further business, the meeting adjourned Friday, January 22, 1999, at 11:30 a.m.**

Charter Boat Pilot Survey Team  
 Meeting Summary  
 January 26, 1999

The meeting convened at 9:00 a.m. The following people were present:

- Joe O'Hop, FMRI, St. Pete, FL
- Martha Norris, FMRI, St. Pete, FL
- Richard Cody, FMRI, St. Pete, FL
- Michelle Kasprzak, LDWF, Baton Rouge
- Jill Kelly, LDWF, Baton Rouge
- Tom Van Devender, MDMR, Biloxi, MS
- Kerwin Cuevas, MDMR, Biloxi, MS
- Kevin Anson, AMRD, Gulf Shores, AL
- Dave Van Voorhees, NMFS, Silver Spring, MD
- David Donaldson, GSMFC, Ocean Springs, MS

Purpose of the Meeting

D. Donaldson stated that the purposes of the meeting was to plan the evaluation for the pilot charter boat methodology. The group needs to outline the material necessary for the evaluation, the criteria, panel members, information to be presented to the panel, time and place of the evaluation, and other pertinent issues.

Evaluation Materials

D. Donaldson noted that there are two types of information that need to be compiled. The first type is the explanation of the procedures for the survey and the other type is the actual raw data and estimates. The following table outlines this information.

<b>Explanation of Procedures</b>		
<i>Information</i>	<i>Person(s) responsible for compiling materials</i>	<i>Deadline</i>
Pilot telephone survey (includes phone, pre-validation, non-respondent information, etc.)	D. Donaldson/Charter boat team	Comments due to GSMFC by February 2 <sup>nd</sup> .
MRFSS random digit dialing	D. Van Voorhees	Information needs to be compiled from existing materials and is due to GSMFC by March 31 <sup>st</sup> .
Logbook panel survey	E. Cortes	D. Van Voorhees will contact E. Cortes and materials are due to GSMFC by March 31 <sup>st</sup> .

<i>Information</i>	<i>Person(s) responsible for compiling materials</i>	<i>Deadline</i>
Costs Pilot telephone Logbook panel MRFSS RDD	Gulf states E. Cortes D. Van Voorhees	States will send cost accounting forms to GSMFC ASAP; D. Van Voorhees will contact E. Cortes and costs for the logbook panel and RDD survey are due to GSMFC by March 31 <sup>st</sup> .
Analysis procedures	D. Van Voorhees	Information is due to GSMFC by March 31 <sup>st</sup> .

<b>Data</b>		
<i>Information</i>	<i>Person(s) responsible for compiling materials</i>	<i>Deadline</i>
Pilot telephone data and estimates	D. Van Voorhees	Presented at the meeting. Any comments need to be received at GSMFC prior to March 31 <sup>st</sup> deadline.
RDD data and estimates	D. Van Voorhees	Needs to be compiled and is due to GSMFC by March 31 <sup>st</sup> .
Logbook panel data and estimates	D. Van Voorhees/E. Cortes	Needs to be compiled and is due to GSMFC by March 31 <sup>st</sup> .
Pre-validation data and summary of analysis	T. Sminkey/D. Van Voorhees	T. Sminkey will send out preliminary estimates by February 2 <sup>nd</sup> . The group will have a conference call on February 9 <sup>th</sup> @ 9:00 CST to discuss the estimates.
Non-respondent data and summary of analysis	D. Donaldson	Presented at the meeting. Need to develop a table which included the vessel id and results of phone calls. Any comments need to be received at GSMFC prior to March 31 <sup>st</sup> deadline.

### Evaluation Criteria

The group discussed the evaluation criteria that will be used by the review panel. The criteria are:

- Accuracy issues
  - non-respondent bias
  - sampling frame bias

- over coverage bias
  - reporting errors bias
  - measurement bias
  - recall bias
- Cost of conducting survey
  - Burden to respondents
  - Credibility of data

Discussion of Potential Panel Members

The group began compiling a list of potential members to serve of the review panel. The following people were suggested:

Andrew Loftus (Washington DC)  
 Cynthia Jones (ODU)  
 Ken Pollack (NCSU)  
 Bernard Megrey (NMFS-NW region)

John Hayne (North Carolina)  
 John Hoeng (VIMS)  
 Bob Ditton (TAMU)  
 Jay Geagan (LSU)

The group then select the top three that should be contacted about serving on the panel. They were: Cynthia Jones, Ken Pollack, and Don Hayne. D. Van Voorhees will contact these people and determine if they are willing to participate in the evaluation. This task needs to be completed as soon as possible to ensure that the review is conducted in a timely manner. D. Donaldson offered to pay for travel of the review panel and evaluation team members. D. Van Voorhees stated that NMFS would like to provide funds for travel as well. It was agreed that the GSMFC and NMFS will provide funding to the review panel and evaluation team members.

Evaluation Presentation Format

D. Donaldson stated that the format of the evaluation should be that the team member present an overview of the project to the review panel, field questions from the panel and then let the review panel evaluate the methods. This format was used in the RecFIN(SE) program review and appeared to be effective. The group discussed design of the presentation and after some deliberations, the group agreed on the following:

<b>Presentation Materials</b>		
<i>Presentation section</i>	<i>Person(s) responsible for developing materials</i>	<i>Deadline</i>

MRFSS Overview of MRFSS and problems associated with for-hire sampling  RDD procedures	D. Van Voorhees  NMFS contractor personnel	Due at GSMFC by March 1 <sup>st</sup> . Presentation should be in Microsoft PowerPoint format.
<i>Presentation section</i>	<i>Person(s) responsible for developing information</i>	<i>Deadline</i>
Pilot Telephone Survey Vessel frame development and maintenance  Data collection activities phone calls pre-validation	D. Donaldson  J. O'Hop/M. Kasprzak (w/ input from of other states	Due at GSMFC by March 1 <sup>st</sup> . Presentation should be in Microsoft PowerPoint format.
Logbook Panel Survey Data collection activities	E. Cortes	Due at GSMFC by March 1 <sup>st</sup> . Presentation should be in Microsoft PowerPoint format.
Analysis Procedures Sample draw RDD Pilot phone survey Logbook panel survey	D. Van Voorhees	Due at GSMFC by March 1 <sup>st</sup> . Presentation should be in Microsoft PowerPoint format.

### Time and Location of Evaluation

The group discussed the time frame and location of the evaluation. D. Donaldson stated that the evaluation should be completed as soon as possible. There has been some indications that the results of the evaluation should be available for presentation at the March Gulf Council meeting. The group believed that completing the evaluation by March was not possible. There are too many tasks that need to be completed to have the evaluation done by March. It was suggested that the group should strive for completion by May. There was a lot of discussion regarding this issue and it was finally agreed that the group should strive to complete the evaluation by May 15<sup>th</sup>. This would mean that the review panel would need to meet in April. The group realized that due to the availability of the reviewers and other issues, it might not be possible to meet the goal of completing the evaluation by May 15<sup>th</sup>. Therefore, they established a deadline of July 15<sup>th</sup> as the latest possible date for completion of the evaluation. The group discussed the location of the evaluation and agreed that it should be held in Silver Spring, Maryland.

### Potential Improvements to the Current Survey Methodology

The group discussed several options for improving the current methodology. The group developed the following list

- Based on analysis of the pre-validation data, develop methods for periodic pre-

validation sampling instead of routine sampling;

- Develop methods for pre-validating guide boats;
- Develop methods for getting non-cooperative captains back into the survey;
- Develop methods to sample vessels only once during a wave (NMFS is examining this issue and the group could potentially begin testing it in wave 3 of this year); and
- Add "start time" question to pilot phone survey to improve the compatibility of the phone and pre-validation data.

The group will be looking at these issues and developing methodologies as resources become available.

**Being no further business, the meeting was concluded at 4:45 p.m.**

**TCC ANADROMOUS FISH SUBCOMMITTEE  
MINUTES  
Tuesday, March 16, 1999  
New Orleans, Louisiana**

**APPROVED BY:**  
  
**COMMITTEE CHAIRMAN**

Chairman Doug Frugé called the meeting to order at 1:08 p.m. The following members and others were in attendance.

**Members**

Norman Boyd, TPWD, Port O'Connor, TX  
Doug Frugé, USFWS, Ocean Springs, MS  
Alan Huff, FDEP, St. Petersburg, FL  
Charles Mesing, FGFFC, Midway, FL  
Larry Nicholson, GCRL, Ocean Springs, MS  
Howard Rogillio, LDWF, Lacombe, LA

**Staff**

Ronald R. Lukens, Assistant Director, Ocean Springs, MS  
Nancy K. Marcellus, Administrative Assistant, Ocean Springs, MS  
Gregg Bray, Survey Coordinator, Ocean Springs, MS

**Others**

Laura Jenkins, USFWS, Panama City, FL  
Michael Bailey, NMFS, St. Petersburg, FL  
John Roussel, LDWF, Baton Rouge, LA

**Adoption of Agenda**

Frugé asked that agenda item number 13, *Demonstration on Pascagoula River GIS Database*, be held until the next meeting. He also asked that "Stocking of Striped Bass in Toledo Bend Reservoir" be added under *Other Business*. L. Jenkins requested that "1999 Plans" be added under agenda item number 6, *Gulf Striped Bass Production and Distribution, 1998*. **A. Huff made a motion to adopt the agenda with those changes. The motion was seconded by C. Mesing, and the agenda was adopted.**

**Approval of Minutes (October 12, 1998)**

H. Rogillio noted that his name was spelled incorrectly on the first page of the minutes. **A. Huff made a motion to approve the minutes with the name correction. The motion was seconded by C. Mesing, and the minutes were unanimously approved.**

**Agency Reports**

- a. Alabama Marine Resources Division - Not Represented.
- b. Florida Department of Environmental Protection - A. Huff indicated that he had no update at this time but would be giving a presentation on the Florida Sturgeon Working Group later on the agenda.
- c. Florida Game and Fresh Water Fish Commission - C. Mesing gave an update on the Corps of Engineers (COE) dredging permit on the Apalachicola River. The COE has been operating for 2 years without a permit,



and FDEP has been trying to develop the permit conditions to maintain the disposal to the disposal sites. In recent years the COE has been piling the sand up 10-15 feet above the river bank. This year meetings were held with Governor Chiles, and the final permit conditions were sent to the COE in December. The COE is not happy with the permit conditions and sent a letter asking that time be set aside in July for an administrative hearing. The COE contends that they can not operate on the Apalachicola River under such strict conditions. Preparations are being made for an administrative hearing on the dredging, which is so massive on the Apalachicola, that all the impacts, except the obvious of covering habitat areas, are unknown at this time.

Florida is also involved with Alabama and Georgia in water allocation issues in the Apalachicola-Chattahoochee-Flint system. One of the concerns they have if they eliminate navigation, they face the possibility of losing water downstream. What they would like to see is navigation be maintained on the river and disposal be managed in a manner that would be less harmful to the environment than it is now. Florida is probably going to ask Congress to give the COE money for this project. If water is lost, it will affect the bays, the creeks, and the tributaries. It is a dilemma that will work itself out, but Florida may be lobbying to help get the COE funding for moving sand downstream. Something should be known by October 1999.

Florida has slowly been turning Lake Talquin into a Gulf striped bass broodstock source. Over the past 3 years, after the performance evaluation was done, they have been trying to turn it all over to Gulf fish. They have been using the St. Johns River for Atlantic striped bass broodstock. Now they have a problem with broodstock out of the St. Johns River being very poor quality. The fish do not grow very big and stay in the refuges so long that the egg quality is poor. In the past, Lake Talquin, which is about 40 miles to the east of the Apalachicola, has been used to supplement St. Johns River fish. There has always been a concern about Atlantics getting out of Lake Talquin and moving over to the Apalachicola. The Service met at the meeting in November and has come up with a way to get fry from South Carolina and other places for the next few years to get enough fish to stock in the St. Johns River. Mesing feels that the St. Johns River will not become a reliable source of broodfish because of the warm conditions and the length of time the fish stay in the refuges. That has been worked out temporarily but there is a lot of pressure within Game and Fish to put Atlantics back in Lake Talquin. It has been resolved for now but the issue may resurface later. There are some good year classes of Gulf fish in Lake Talquin, particularly 3 year old fish. Next year should be good year for Gulf broodstock from Lake Talquin.

d. Louisiana Department of Wildlife and Fisheries - H. Rogillio reported that things are better after the problems with the Stewardship project during the first year. The genetic tags seem to be working well. Things also seem to be working out well on the Tchefuncte River. Phase 1 and Phase 2 fish were released. They also have some ongoing Gulf sturgeon work. They are considering looking at critical habitat in Lake Pontchartrain.

e. Gulf Coast Research Laboratory - L. Nicholson reported that they are having a pretty good year since they got through their Phase 1 disaster. Phase 2 success rates are very good with almost 70% survival. They are in the process of getting the tanks ready for the 1999 season. They will be getting Atlantics from Toledo Bend this year. At this time they are planning on the same rearing regime, with perhaps something different with the diet to determine the cause of significant number of deformities. Nicholson provided the Subcommittee with handouts on the GCRL's striped bass projected 1998 Phase I and Phase II harvesting. He also distributed a table on GCRL's 1998 tag return data.

f. Mississippi Department of Wildlife Fisheries and Parks - Not Represented

g. Texas Parks and Wildlife Department - N. Boyd reported that Texas still is not doing any marine work in striped bass. They have a large ongoing inland program. A process was started last year where the legislature divided the state into 16 regions. In each region a 20 member committee was appointed to

develop a water plan for their respective regions, taking into consideration all the regions around them and how it may affect them. There may be the possibility of inter-basin transfers of water.

h. National Marine Fisheries Service - Not Represented

I. U.S. Fish and Wildlife Service - D. Frugé reported that the FWS has been holding a number of Gulf striped bass at the Mammoth Springs fish hatchery in Arkansas for the last 10 years or more. There has not been a good record of producing fry from there, and the Service is evaluating its cost effectiveness. They are currently holding about 2,000 of those fish which will probably be phased out over the next few years. If there are other uses for those fish, such as radio tracking, they can be used for that. The Service will also be looking at some other alternatives for spawning those fish. Maintaining them at Mammoth Springs is a good place to hold these fish since the water quality is very good and they grow very well there, but it may not be the best place for spawning them. Unless there is a real need for those fish, they will probably phase them out over the next few years.

FWS is looking for proposals for funding opportunities on fish passage, and reverted sport fish funds for general research projects involving sport fish. FWS will be accepting proposals for those types of projects for next couple of weeks. Frugé notified Stewardship Project participants of those funding opportunities.

Frugé reported that the Alabama shad status report is in the process of being finalized with the Panama City office who had drafted report. Frugé got together with Stuart Poss at GCRL to try and augment the data sources that the status of the species is being based on by using existing collections at museums over time. Frugé noted that they have a new employee at the Baton Rouge fisheries office working with the museum data as well as looking for additional data. This will be going on over the next 6 months in an effort to finalize that status report.

Last week a request was sent to the contracting office in Atlanta to initiate a contract with Ike Wirgin for Gulf striped bass broodstock analysis. The contract is for \$8,000 and will provide analysis for about 90 samples. That contract will probably will not be in place at the start of spawning activity this year, but it should be in about a month. Wirgin will probably analyze samples even though technically he does not have an official contract.

**Stewardship Project Technical or Administrative Concerns**

Frugé indicated that he put this item on the agenda in the event anyone had any technical or administrative concerns regarding the stewardship projects. There will be a contract request for doing genetic analysis on samples collected through the stewardship projects or any other sampling programs for striped bass in the Gulf. Initially \$8,000 was to be requested to analyze about 160 samples. Approximately \$2,000 could possibly be added to that contract later in the year if it looks like there are going to be enough samples to make it worth while. Frugé may send out a request to Stewardship Project participants to see how many samples they have or anticipate as a goal for next year. Lukens reminded the Subcommittee about the Gulf striped bass database and to submit those data elements that are associated with those genetic samples. Last year 190 samples were analyzed, but Lukens did not receive any of that data.

Lukens also expressed concern that when this project is over and the money is not there, striped bass work will be put on hold again. He requested that Subcommittee members begin to consider alternate funding sources.

### **Gulf Striped Bass Production and Distribution, 1998**

L. Jenkins distributed and discussed a handout entitled "1998 Phase I and Phase II Gulf Striped Bass Stocking throughout Florida, Georgia, Mississippi, and Louisiana."

In summary for 1998:

Total fry produced	6,896,000
Total Gulf Phase I stocked	1,621,580
Total Gulf Phase II stocked	209,348
Atlantic Phase I stocked	416,320
Atlantic Phase II stocked	6,906
Total Stocked	2,254,154

Jenkins also provided handouts entitled, "State and Federal Hatcheries - Gulf Striped Bass Production Capabilities - 1999", "Total Needed Production by Hatchery - 1999 Year Class", "Gulf Striped Bass Stocking Requests for the A-C-F, Lake Talquin and the Choctawhatchee River, FL", and "Gulf Striped Bass Stocking Requests for Other River Systems". At this time Jenkins feels the potential is there to meet everyone's fry requests.

### **Stocking of Gulf Striped Bass in Toledo Bend Reservoir**

Frugé reported that Louisiana Department of Wildlife and Fisheries (LDWF) has requested one million Phase 1 Gulf race striped bass for stocking in Toledo Bend. Over the last few years they have seen some problems with size of striped bass in Toledo Bend. To help remedy this, the state was proposing to get some fresh genetic material from the State of Maryland, which are supposed to be Atlantic fish, to stock in Toledo Bend this year. The Louisiana state personnel were approached and asked if they would be willing to stock Gulf race there if they were provided with the fish. They agreed and plans were made to provide them one million Phase 1 Gulf fish to go into Toledo Bend. Frugé discussed this issue with Louisiana and suggested that they check with the State of Texas to make sure they were not stocking Atlantics in any of the reservoirs that drain into Toledo Bend. There is one reservoir at the end of Sabine River in which they stock Atlantic striped bass. Recently, Frugé had a discussion with the regional director for inland fisheries for the State of Texas, who expressed a bigger concern. They are uncomfortable with stocking Gulf race fish in Toledo Bend because the broodstock source for their inland program is primarily Lake Livingston, which is on the Trinity. Their concern is that if Gulf race fish are stocked in Toledo Bend on the Sabine it would be easy for those fish to migrate into the Gulf and then come up the Trinity River, potentially contaminating their genetic genotypes that are used in their stocking program. They have a very successful reservoir stocking program in the State of Texas using Atlantic race fish. At this point Arthur Williams is supposed to try and contact the Texas regional inland director to schedule a meeting to discuss this. Stocking the Gulf race in Toledo Bend is currently on hold until the issue is resolved.

### **Gulf Striped Bass Brochure**

L. Jenkins provided Subcommittee members with a handout containing the text for the Gulf striped bass brochure entitled "What is a *Gulf* Striped Bass?". Jenkins asked that everyone review the text and provide comments to her as soon as possible.

### **FWS Gulf Sturgeon Activities**

Jenkins discussed a cooperative project involving Ph.D. student Dwayne Fox from North Carolina. For the past 2 years the study has been funded by NMFS, while the prior 2 years were funded by FWS. He is investigating Gulf sturgeon habitat use in the Gulf of Mexico. Twenty sturgeon were equipped with sonic tags. Forty percent of the adult fish that were tagged were out in the Gulf of Mexico for an extended period of time. At this time it is not known how far offshore they go.

Frank Parauka, FWS in Panama City, has been tagging sub-adult sturgeon under 80 lbs. He has found that 9% of those went out into the Gulf. Seventy-eight percent of those 20 fish stayed in the Choctawhatchee Bay in 4-12 feet of water, while 13% of those went into Santa Rosa Sound, but not out into the Gulf.

The Florida Department of Environmental Protection and the Alabama Department of Conservation and Natural Resources are looking at spawning habitat in Yellow River. The FWS will provide spawning pads, while FDEP and ADCNR will do the field work.

Jenkins advised the Subcommittee that on April 21, 1999, a meeting will be held in Mobile, Alabama on Corps of Engineers dredging impacts on the sturgeon. Doug Nester is the contact person for that meeting.

### **Lake Pontchartrain Gulf Sturgeon Bycatch**

Frugé reported that there is anecdotal information that there may be some bycatch of young sturgeon in Lake Pontchartrain. The FWS Office on Endangered Species indicated that they need to deal with this issue. In the spring, the FWS will take the lead and set up meeting with Louisiana to discuss the issue and, if necessary, how to deal with it.

### **Update on Florida Sturgeon Working Group Plan**

A. Huff gave a presentation on the Florida sturgeon working group. Five actions resulting from the working group include:

1. Does not contest the present permitting of nonindigenous sturgeon.
2. State of Florida will initiate petition process for delisting of captive bred shortnose sturgeon.
3. It supports continued distribution of captive bred Gulf sturgeon to Florida aquaculturists, and will initiate the process to delist captive bred Gulf sturgeon.
4. Legislation will be sought to secure state funds to coordinate conservation and aquaculture activities for native sturgeon.
5. The State of Florida will develop a conservation plan for native sturgeon.

As discussed at the last meeting, a plan is being drafted that is focusing on conservation of sturgeon in Florida, rather than commercial production. Huff will keep the Subcommittee updated on the working group activities.

### **Gulf Striped Bass Fishery Management Plan Revision**

As discussed at the last meeting, the Subcommittee's request to the State-Federal Fisheries Management Committee and the Commission to consider revision of the Striped Bass Fishery Management Plan was

approved with the stipulation that it would occur no sooner than the year 2000. In preparation for that revision Subcommittee members were assigned to review various sections of the FMP. Those assignments are:

Section 1 - *Summary* - GSMFC Staff

Section 2 - *Introduction* - GSMFC Staff

Section 3 - *Description of Stocks* - C. Mesing

Section 4 - *Description of the Habitat of the Stock(s) Comprising the Management Unit* - C. Mesing

Section 5 - *Fishery Management Jurisdictions, Laws, and Policies Affecting the Stocks* - No Assignment

Section 6 - *Description of Fishing Activities Affecting the Stocks in the United States Gulf of Mexico* - L. Jenkins to coordinate with state input

Section 7 - *Economic Characteristics of the Fishery* - L. Jenkins to coordinate with state input

Section 8 - *Social and Cultural Framework of Domestic Fishermen and their Communities* - D. Frugé

Lukens asked that all Subcommittee members go through the FMP and review their individual state information. The time frame for these assignments is the next Subcommittee meeting in October 1999, with the anticipation that the revision of the FMP could begin in January 2000.

### **Gulf Striped Bass Genetics**

a. Heritability of Heteroplasmy - L. Jenkins gave a brief explanation of this agenda item noting that when looking at the stocking sheets at genotypes of fish stocked, some genotypes have 2 letters by them. That indicates the length of the molecule. Basically, what Ike found is if there is a female fish, as an example, with a CA2 genotype there is a 10-20% chance that its offspring could be a C2, a A2, or it could be a CA2. So as far as using it as a genetic marker, fish that have a C2 or an A2 should not be stocked as a comparison genotype.

b. Isaac Wirgin Proposal - Frugé reported that Ike Wirgin submitted a proposal to both the GSMFC and FWS to evaluate taxonomic status of Gulf striped bass. No costs associated with the project have been received from him yet. Specific objectives of the proposal are:

1. To evaluate the heritability of lateral line scale counts of fish under controlled conditions.
2. To quantitatively compare mitochondrial DNA and nuclear DNA differences between ACF striped bass and southeast Atlantic striped bass, and
3. To compare the buoyancy of eggs between ACF fish and Atlantic fish.

The Subcommittee agreed conceptually that this is a good project. Frugé will continue to work with Wirgin to get budget figures.

## Other Business

- a. Gulf Striped Bass Workshop Follow-up - Lukens reported that work has begun on the proceedings from the workshop. Many good comments were received, and most participants have submitted their written manuscripts. A draft of the proceedings will be sent out for Subcommittee review when completed.
- b. Agreement Among States for Gulf Striped Bass Fry Exchange - Frugé reported that at the recent Morone Workshop there was a discussion about producing Gulf race fry for stocking. It was mentioned that the states need to start thinking about more cross exchange among the brookstock sources to avoid inbreeding problems. It was suggested that this topic should be considered in the future with regards to establishing a formal agreement through the Commission with the states to accomplish an orderly exchange of fish.
- c. Hatchery Resolution - Lukens reported that the Director of FWS has for many years tried to discontinue the national fish hatchery system. It is a difficult program to manage, because it is very costly, there is a lot of capital improvements that are required, and there is controversy about using hatchery progeny. Last September at a conference of the IAFWA Lukens attended a joint meeting of the Marine and Estuarine Committee and the Inland Fisheries Committee and heard a presentation from Bill Knapp, FWS Headquarters national fish hatchery coordinator. Mr. Knapp was concerned about the status of the national fish hatchery system and asked the Committees to assist the FWS in addressing some of the issues and problems. Lukens was assigned by the Chairman of his committee to work with Mr. Knapp on this issue. Lukens recently attended a meeting sponsored by the American Sportfishing Association and there is an ambitious initiative to try to work with the FWS directorate, and perhaps Congress, to try to get funding to support the national fish hatchery system. In response to that Lukens drafted a resolution (Attachment 1) recognizing that there is a need, as it relates to striped bass, to continue support of the national fish hatchery system.

Lukens presented the resolution to the Subcommittee for consideration. A. Huff suggested the following changes:

1<sup>st</sup> WHEREAS - WHEREAS fish hatcheries are a valuable tool in comprehensive fisheries restoration/management programs, and

to read: WHEREAS fish hatcheries **can be** a valuable tool in comprehensive fisheries restoration/management programs, and

NOW THEREFORE BE IT RESOLVED that the GSMFC believes that fish hatcheries are an important tool in many fisheries...

to read: NOW THEREFORE BE IT RESOLVED that the GSMFC believes that fish hatcheries **can be** an important tool in many fisheries...

**C. Mesing made a motion to accept the hatchery resolution with Huff's changes and send the resolution forward to the TCC for their approval. The motion was seconded by A. Huff and unanimously approved.**

- d. Natural Reproduction in Weiss Reservoir - Frugé reported to the Subcommittee that at the recent Morone Workshop a presentation was made on natural reproduction, from what appears to be Atlantic striped bass, in Lake Weiss. These fish apparently are getting into the Alabama River system in large numbers. Frugé was aware there was some natural reproduction going on in that system, but not of the magnitude of what has been found. The State of Alabama has produced a Federal Aid report which touches on this topic. Frugé feels there are still some questions on the identity of these fish and exactly what is occurring, and he feels that the issue may warrant more investigation. Frugé will get a copy of this report for the Subcommittee.

e. Update on Sonic/Radio Tag Development - Jenkins reported that the Fish and Wildlife Service has decided to drop the contract for the sonic/radio tag development with Bill Whelen. Whelen's health will not allow him to complete the tag development. Jimmy Barkuloo, who has been working with Whelen on the tags is still interested in the project and will continue to pursue it as a hobby. Frugé added that Whelen had probably met the contract requirements 5 or 6 years ago, but chose not to complete the project opting instead to try to make the tags better.

**There being no further business the meeting adjourned at 5:10 pm.**



# GULF STATES MARINE FISHERIES COMMISSION

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## RESOLUTION

### ON THE NEED FOR A NATIONAL FISH HATCHERY SYSTEM

WHEREAS fish hatcheries <sup>can be</sup> are a valuable tool in comprehensive fisheries restoration/management programs, and

WHEREAS the U.S. Fish and Wildlife Service (USFWS) has a long history of successfully managing a series of fish hatcheries throughout the nation, and

WHEREAS the States in the Gulf of Mexico region have relied for many years on the USFWS fish hatcheries to supply hatchery reared striped bass in excess of those produced by state fish hatcheries, and

WHEREAS the Striped Bass Fishery Management Plan (FMP) of the Gulf States Marine Fisheries Commission (GSMFC) calls for continued stocking of hatchery-reared Gulf striped bass in concert with habitat improvement and other restoration and management actions, and

~~WHEREAS striped bass would probably disappear from most Gulf rivers without a stock enhancement program, and~~

WHEREAS the Memorandum of Understanding among the States of Alabama, Florida, and Georgia and the USFWS to restore striped bass in the Apalachicola-Chattahoochee-Flint River System and a Memorandum of Understanding between the Commission and the USFWS call for continued interagency cooperative stocking of hatchery-reared Gulf striped bass, and

WHEREAS the need for hatchery-reared Gulf striped bass, as called for in the FMP, exceeds the production capacity of state and federal fish hatcheries,

NOW THEREFORE BE IT RESOLVED that the GSMFC believes that fish hatcheries <sup>can be</sup> are an important tool in many fisheries restoration/management programs, and while hatchery stock enhancement can negatively impact wild stocks if not carefully executed, captive propagation can be applied effectively, given proper evaluation of hatchery stocked fish, to assist in restoring declining fish populations and managing fisheries which require supplementing natural reproduction.

-Alabama-

-Florida-

-Louisiana-

-Mississippi-

-Texas-



RESOLUTION

Need for a National Fish Hatchery System

Page -2-

BE IT FURTHER RESOLVED that the federal fish hatchery system, managed and maintained by the USFWS, plays a vital role in restoring and managing native stocks of striped bass in the Gulf of Mexico region.

BE IT FINALLY RESOLVED that the GSMFC supports increased federal funding of the fish hatchery system of the USFWS for such applications as interjurisdictional fisheries restoration and management, restoration of threatened and endangered species (such as Gulf sturgeon), management of fisheries programs on USFWS lands, and research to support fish hatchery practices.

*Given this the eighteenth day of March in the year of Our Lord, One Thousand, Nine Hundred, Ninety-nine.*

---

George Sekul, Chairman  
Gulf States Marine Fisheries Commission

APPROVED BY:  
  
COMMITTEE CHAIRMAN

**TCC HABITAT SUBCOMMITTEE  
MINUTES  
Monday, March 15, 1999  
New Orleans, Louisiana**

The meeting was called to order by Chairman Dale Shively at 8:30 a.m. The following members and others were present:

**Members**

Frank Courtney, FDEP, St. Petersburg, FL  
Phil Steele, FDEP, St. Petersburg, FL  
Steve Heath, ADCNR, Gulf Shores, AL  
Glenn Thomas, LDWF, Baton Rouge, LA  
Paul Cook, LDWF, Baton Rouge, LA  
Mark LaSalle, MSU Coastal Research and Extension Center, Biloxi, MS  
Bob Spain, TPWD, Austin, TX  
Dale Shively, TPWD, Austin, TX  
Rickey Ruebsamen, NMFS, Baton Rouge, LA (*Proxy for Andy Mager*)  
Doug Frugé, USFWS, Ocean Springs, MS (*Proxy for Larry Goldman*)  
Leslie Turney, ADEM, Mobile, AL

**Staff**

Jeff Rester, Habitat Program Coordinator, Ocean Springs, MS  
Cheryl Noble, Staff Assistant, Ocean Springs, MS  
Ron Lukens, Assistant Director, Ocean Springs, MS

**Others**

Chris Dorsett, Gulf Restoration Network, New Orleans, LA

**Adoption of Agenda**

The agenda was adopted with the following change. Under *Other Business*, if time allows G. Thomas would like to give a presentation on Coast 2050 in Louisiana.

**Adoption of Minutes**

The minutes were adopted without changes.

**Commission Mariculture Policy**

J. Rester presented the Draft Commission Policy on Mariculture. He stated that after the policy was sent out for review by the Subcommittee, it did not have enough votes to be approved and passed on to the Technical Coordinating Committee (TCC). Any suggested changes could now be discussed.

R. Ruebsamen stated that the policy did not discuss the issue of entrainment or impingement of native organisms on intake screens. After discussion, a new sentence dealing with this issue was added to the policy.

F. Courtney brought up the use of exotic species as mariculture organisms. Section A of the policy was changed to read as follows. "The Commission recommends that native species receive priority as candidate culture species. The Commission opposes use of non-native species (exotics) in mariculture systems unless approved procedures are in place to prevent escapement and associated detrimental impacts. thorough investigation has demonstrated it has no detrimental impacts on native species. The sale of exotic species shrimp as bait should be prohibited and an outreach program developed to educate sport fishers and bait shrimp retailers about the risks of spreading diseases and encourage retailers to label bait as to its point of origin."

Discussion ensued on the issue of exotic diseases being spread by dead products brought into the U.S. for processing. Although these organisms are dead, disease can still be spread to native organisms by waste water used in the processing operations. The following sentence under Section D was modified to read "Standard operating procedures should contain methods to prevent escapement, accidental transport, release of cultured organisms, or their pathogens" to show their concern over this issue. The Subcommittee did not think that the policy needed to cover diseases from processing facilities, but this issue was important and should be discussed at the next meeting. **D. Frugé made a motion to adopt the Commission Policy with the appropriate changes and forward it to the Technical Coordinating Committee. This motion passed.**

#### **Summary of Aquaculture Programs by State**

J. Rester presented the updated Summary of Aquaculture Programs by State. He stated that the summary was as up to date as possible but Texas and Florida could possible change this summer because of legislative changes. D. Shively stated that the back page for Texas was missing and there has been a change on one of the Texas forms. J. Rester stated that Texas Senate Bill 1507 was not legible on all pages and requested a better copy of the Bill. G. Thomas stated that there were now two permits for mariculture facilities in Louisiana and that this needed to be changed on page 15 of the document. With these changes, the summary was accepted.

#### **Reprinting of the Protecting Fish Habitat Brochure**

J. Rester reported that the Protecting Fish Habitat brochure is now in the process of being reprinted. A \$5,000 grant from USFWS Federal Aid is covering the cost of reprinting the brochure. He asked each state representative to identify an organization or contact person in each state to deliver the brochures to for distribution. There was also some discussion concerning who owned the plates that are used in printing the brochures. J. Rester stated that he would check into who owns the plates and the possibility of acquiring these plates.

#### **Habitat Poster**

D. Shively stated that the graphic design artists at TPWD could design the new habitat poster at no charge. They will volunteer their time to help in the design and layout of the poster. The only charges would then be for printing. He stated that a recent poster done by TPWD produced 7,500 posters for \$4,600.

Discussion then ensued on the design of the poster and the concept for the poster. It was decided that the best concept would be that without habitat you do not have fish. The target audience for the poster would be the general public. It was also decided that the poster should keep text to a minimum. The Subcommittee's belief was that people do not want to take the time to read a poster. The message of the poster needs to be conveyed in as few words as possible.

Subcommittee members were charged with gathering photographs or illustrations of representative habitat types within their respective state. Members would also provide text that describes the habitat destruction or degradation that is currently happening in their state. It was stressed that all habitat types are important and this also needs to be stressed in the poster.

J. Rester asked members if they had any possible funding sources. He stated he had already talked to Chevron and the National Fish and Wildlife Foundation about possible funding. Members suggested the Nature Conservancy, Gulf of Mexico Program, World Wildlife Fund, Coastal Conservation Association, and the Audubon Society. P. Steele also stated that the individual states could contribute to the funding of the poster.

Members of the Subcommittee were charged with getting the photographs or illustrations to J. Rester by May 1. **A motion was made to ask the TCC for approval to carry on the habitat poster project. The motion passed.**

### **Irreplaceable Habitat Types**

J. Rester stated that this agenda item came from a November Gulf of Mexico Fishery Management Council Habitat Protection Advisory Panel meeting. There are several areas in the Gulf of Mexico region that contain habitat that is irreplaceable. Several of these areas are also constantly under development pressure. The example he gave was an area on the north side of Grand Isle in Louisiana. This area contains approximately 115 acres of mangroves and salt marsh habitat. Over the past fifteen years this area has tried to be developed at least twice. Members of the Advisory Panel saw an opportunity to try and help conserve these areas. The Council did not follow through on the Advisory Panel's suggestion. J. Rester thought this could be a project that the Subcommittee could work on.

Ideally what J. Rester would like to do is have the Subcommittee identify areas in each state that are under development pressure. He would then try to work with conservation organizations to help in the conservation of these areas. He stated that possible conservation organizations are the National Fish and Wildlife Foundation and Nature Conservancy and funding is available from the Corps of Engineers. He stated that the Subcommittee would not play a large role in the actual acquisition of these areas. The Subcommittee would only help identify areas in each state that need to be conserved to preserve important fish habitat. M. LaSalle stated that he knew of several researchers who were doing similar work and that these researchers should be contacted in the process of developing this list.

### **EFH Annotated Bibliography**

D. Shively stated that TPWD will be reviewing all aspects of the shrimp industry this year. He also stated that there has been limited research on fishing gear impacts to habitat. TPWD main focus area will be shrimping operations in the Texas inshore bay systems. He stated that NMFS recently only partially approved the Gulf Council's EFH amendment. One of the sections only partially approved was the fishing gear impacts section. Therefore, further research needs to be done on habitat impacts. One of the ways to start this future research is to identify what research has already been done.

D. Shively would like the Subcommittee to prepare a fishing operations impacts on habitat paper covering all aspects of fishing operation impacts without singling one particular industry out. This annotated bibliography would contain research papers on all facets of gear impacts.

J. Rester asked if the bibliography would contain research on all fishing operations impacts or just fishing operations in the Gulf of Mexico.

D. Shively responded that ideally it would contain research from other areas. J. Rester responded that most of the fishing operations impact studies that have been done were in the Northeastern U.S. and in the North Sea area. The habitat types located there are not the same as in the Gulf of Mexico and therefore the impacts would be different. He felt the bibliography should only concentrate on fishing operations impacts within the Gulf of Mexico region.

The question arose to whether the Habitat Subcommittee needed TCC approval to start the compilation of this material. R. Lukens responded that he thought it would be a good idea to get approval before proceeding with this project. Some members of the Subcommittee were concerned about this being a controversial project, so **a motion was made to seek TCC approval and to proceed forward with the Annotated Bibliography on fishing operations impacts on habitat making sure that the paper did not single out or focus on a single fishery. The motion passed.**

J. Rester requested that everyone gather any research on habitat impacts that they were aware of and forward them to him. A possible meeting to discuss the paper was discussed. The cost of the meeting was raised and whether money for this meeting could be budgeted. R. Lukens responded that costs would be minimal (\$2,000-4,000) and that money could be budgeted for this activity if it arose. This meeting will be discussed in the future when more information is available.

#### **Habitat Brochures From Each State**

D. Shively stated that in the past, the Subcommittee had started to collect habitat informational brochures from each state. These were compiled in case anyone needed habitat information from a certain state quickly. D. Shively now currently has the past collection and asked everyone in each state to try and gather brochures and send them to him. He also would like to receive any new brochures when they are produced.

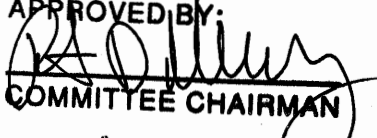
#### **Other Business**


Under other business, G. Thomas presented the Coast 2050 project in Louisiana. This project is trying to combat the alarming rate of coastal erosion in Louisiana. He gave a brief overview of some of the current coastal restoration projects.

**With no other business, the meeting adjourned at 12:15 p.m.**

**COMMERCIAL/RECREATIONAL FISHERY ADVISORY PANEL  
MINUTES**

**Monday, March 15, 1999  
New Orleans, Louisiana**

APPROVED BY:  
  
COMMITTEE CHAIRMAN

APPROVED BY:  
  
COMMITTEE CHAIRMAN

Chairman Pat Murray called the meeting to order at 8:32 a.m and a quorum was met for both the commercial and the recreational components of the panel. The following members and others were present:

**Members**

Scott Riley, Tallahassee, FL  
David Dexter, CCA, Mobile, AL  
Pete Barber, Alabama Seafood Association, Bayou La Batre, AL  
Bob Fairbank, Mississippi Power, Gulfport, MS  
Philip Horn, Clark Seafood, Pascagoula, MS  
Randy Gros, Marrero, LA  
Greg Faulkner, Milton, LA  
Pat Murray, CCA, Houston, TX  
Bob Zales II, Panama City, FL

**Staff**

Larry B. Simpson, Executive Director, Ocean Springs, MS  
Ron Lukens, Assistant Director, Ocean Springs, MS  
David Donaldson, Data Program Manager, Ocean Springs, MS  
Steve VanderKooy, IJF Coordinator, Ocean Springs, MS  
Cindy Yocom, Staff Assistant, Ocean Springs, MS  
Nancy Marcellus, Administrative Assistant, Ocean Springs, MS

**Others**

C. Michael Bailey, NMFS/SERO, St. Petersburg, FL  
Glen Bryant, Milton, LA  
Corky Perret, MDMR, Biloxi, MS

**Adoption of Agenda**

The agenda was approved with no changes.

**Approval of Minutes**

The minutes of the meeting held on October 14, 1998 in San Antonio, Texas were approved as presented.

**Introductions**

Everyone present provided a very brief introduction, including their name and who they represented.

**Follow up on Standardized Gulf License Issue**

L. Simpson followed up the license issue that the panel had brought to the State-Federal Fishery Management Committee (S-FFMC) last October. Simpson reported that the State-Federal Fisheries Management Committee had taken up the action presented by the panel last fall. Several questions were raised including

the potential for revenue loss, the value of having such an exemption, etc. The staff was directed at that meeting to provide documentation of current reciprocal authorities, license cost by state, and current exemptions. The issue was discussed further at the state directors meeting last December and it was determined that the motion, while having merit, would not be well received by the state legislatures due to the potential loss of revenues. Other hunting/fishing issues are closely tied to the existing license discrepancies. Until those issues are addressed it is unlikely that the states will come to agreement on this issue. P. Murray indicated that he had been able to sit in on the State-Federal Fisheries Management Committee meeting and emphasized that the Committee took the issue seriously, considered the practical and political aspects of the issue, and expressed strongly that the Advisory Panel should not be discouraged because the issue did not move forward.

### **GulfFIN - Items of Information and/or Action**

D. Donaldson and R. Lukens made a presentation on the GulfFIN program to bring the panel up-to-speed on the data collection and management initiative. They reported that Gulf States and GSMFC have begun the recreational portion of the survey collecting the MRFSS data. Since the last meeting, the Congress has provided the program with 3 million dollars as a budgetary line item for commercial and recreational data collection called GulfFIN. Around 2 million is currently being used for the recreational survey, and the GSMFC is still trying to get an additional 4 million for commercial data collection.

The Fishery Information Network (FIN) has two components, ComFIN which addresses the commercial sector and RecFIN which addresses the recreational sector. Each program has its own separate goals and objectives. The presentation focused primarily on the ComFIN program which has the mission to cooperatively collect, manage, and disseminate commercial data for the resources in the southeast region. The ultimate goal is a national data collection program with the ACCSP and Pacific Coast programs. The catch-effort data collection program for the commercial side will be a mandatory trip based system that all fishermen will report with standardized data elements. Attachment 1 provides a list of the trip data elements that will be collected. This program is still in the development stages. A copy of the presentation is available at the GSMFC office.

P. Barber raised the question regarding user ID numbers to track products and try to eliminate the extent of the black market sales. The trip ticket system would allow for IDs to be attached to the product and would help enforcement track and prosecute illegal sales. G. Faulkner asked if there is a way to track imports through this program? At this time the system concentrates on products landed in the US but clearly in the future the importance of imports will be included as the program is expanded.

B. Zales brought up the issue of spending. It seems that the inequality of money being dedicated to commercial and recreational data is again pointing towards increased pressure on the commercial sector. D. Donaldson made it clear that the difference is related to the cost of collecting the data not the difference in effort or concentration. The money does not reflect a bias. It costs more to census the commercial fishery when compared to the recreational survey. B. Zales explained the appearance is that the commercial sector has to work harder by requiring more of them. The recreational guys just fish, if they get intercepted, they get surveyed. The commercial guys are filling out forms every time they leave and return to the dock. How can we attempt to balance the scrutiny between the two groups? P. Barber brought up that certain data collection activities in the past have actually caused problems because of how they were collected. Out of the fifteen or so poor data sets and the couple which are just plain bad, is the Commission going to do anything to eliminate these data sets so they don't continue to hurt the industry? At some point in the program are we going to address the validity of these data sets? R. Lukens pointed out that interpretation of historical data is a problem. Lots of factors went into the data we look at now which include effort, participation, weather patterns, regulations, etc. A "meta-data set" is being developed to include with the landings data so that in the future events like hurricanes, economic changes, or changes in the fishery due

to participation or regulations would be available for interpretation. As it stands now, most people forget the details of a season five years later. This would ensure accurate interpretation.

B. Fairbank asked about who will get this data, is this for NMFS or who? The states are collecting it now and sending it to us, we are inputting it, formatting it, and then providing it to the NMFS. This will be the official data for use in making management decisions.

### **Two New BRD Designs**

G. Faulkner introduced several BRDs which he and others have been developing to eliminate the belching problem associated with the retrieval of trawls. He also provided some new netting materials or trawls which are not currently in use in the Gulf but have shown great potential in many other areas of the world. The designs have been submitted to NMFS but were rejected because they did not specifically address red snapper. In the future, proposals will be pushed in that direction. Faulkner pointed out that not every trawl fisherman fishes in red snapper areas and may never encounter one, yet they still have to have the device in their net. In that vain, these designs would continue to allow the release of bycatch and still give the trawl fishermen some satisfaction that a large portion of their catch does not have to be lost.

### **GSMFC Fishery Management Plans**

S. VanderKooy made a very brief presentation of the crab and flounder plans and passed out the spotted seatrout plan for review. Several questions were brought to the table by R. Gros, which VanderKooy attempted to address. VanderKooy indicated that the concerns and comments would be provided through to the Crab Subcommittee which was scheduled to meet on the following day. Comments on the FMPs are due in to the GSMFC office by April 15.

### **Breakout Sessions**

During the breakout sessions two separate issues were discussed.

### **Commercial Fishery Advisory Panel**

#### **Raw Oyster Product Proposal**

The commercial panel was presented with a proposal (Attachment 2) which has been submitted to the FDA to consider new standards and approval of a post-harvest treatment to prevent and/or eliminate *Vibrio* in raw shellfish. The group (Center of Science in the Public Interest) has several different pet projects geared at public health issues (this group succeeded several years ago in getting rid of coconut oil on movie popcorn). While these shellfish issues have some merit, this group uses ageing data and past events to stir paranoia in consumers over the safety of raw shellfish. The industry acknowledges that these threats are real to individuals who are susceptible to *Vibrio* but that education programs are in place to identify those at risk individuals. In addition, the group wants to have "non-detectable" levels of a naturally occurring organism that is always present at some very low background level in the environment. The only process which has been shown to eliminate *Vibrio* 100% is the AmeriPure process. This process is patented, and to use the techniques a processor must buy the franchise rights and the expensive AmeriPure equipment. This proposal would eliminate all raw products from the market. Unfortunately this group has the attention of very high level people in the Washington including Vice-president Gore.

There was general discussion regarding the status of the crab fishery specific to the crab FMP. Some additional discussion took place on the data collection program.



## **Recreational Fishery Advisory Panel**

### **Limited Entry for Rec and Charter Fishery**

Lukens introduced the issue of limited entry, initially for the for-hire sector, subsequent to the issue being raised at the Gulf of Mexico Fishery Management Council. Lukens also added that the panel should discuss limited entry as it relates to the private recreational angler sector. Lukens used the example of the red snapper fishery to illustrate the possible application of limited entry in the recreational sector. The concept is that bag limits are set in order to manage the fishery within set allocations. In cases where the population under management is increasing, people are likely to fish more often, and more people are likely to fish. This opens the door for effort to increase while still fishing within legal limits. This situation occurred with the red snapper fishery, where the recreational sector overfished its allocation several years in a row. One of the problems with a bag limit scenario is that effort cannot be controlled. Lukens explained that this lack of control over effort, resulting in overfishing the allocation, is what triggered the Congress to amend the Magnuson-Stevens Act to require a quota and closure in the red snapper fishery. Lukens pointed out that there are wildlife management programs that use a lottery system to determine the individuals that can participate in a hunt for certain game animals, such as elk. The same concept could be applied to recreational fishing. The question was asked if the idea is to be applied to certain areas or Gulf-wide. Lukens responded that the discussion is conceptual only, and that the discussion is not limited to certain areas. Murray indicated that he felt that the regulation of the guide industry in Texas was coming under greater scrutiny, and may be subject to limited entry. He added that in his experience as a fishing guide, most full time guides would probably not object to limited entry. R. Gros indicated that he felt that there might be a difference in perceptions between the offshore, traditional charter boats and the inshore guide boats. There was some agreement with that observation, and Lukens added that the discussions at the Gulf Council have been limited to the offshore charter boats.

Lukens pointed out that revenues from the Federal Aid in Sport Fish Restoration Program (Wallop-Bureaux) would possibly be reduced by a recreational limited entry program. He added that the recreational fishing industry would likely object, since such a move would negatively impact sales. The recreational panel continued to discuss the need and value of a limited entry program for recreational fishing and charter boats. The panel felt that there was little merit to applying limited entry to the recreational fishery. There was interest in applying limited entry to the for-hire fishery, and the panel suggested that they continue to discuss the issue as it develops. Lukens indicated that the Gulf Council will be developing an options paper for alternatives for limiting entry in the for-hire fishery in the Gulf of Mexico. He suggested that the Recreational Fishery Advisory Panel review those alternatives and provide input to the Council process. The Panel agreed.

### **Environmental Community Involvement in Fisheries**

Murray introduced a discussion regarding the role of environmentalists in fisheries. He indicated that environmentalist have emerged as a third party, commercial and recreational fishers being the two traditional user groups. Issues such as ocean wilderness areas and marine sanctuaries are being widely discussed, and environmental groups support them. He suggested that recreational anglers agree in large part with what environmentalists are saying, but there may be areas of concern. His approach is to work proactively with environmental groups to mold proposals for wilderness areas or sanctuaries, rather than staying separate and engendering contention. Many of the sanctuary and wilderness areas are being proposed as "no fishing" areas, and this is problematic. No one will be on site to watch activities in the areas, law enforcement will be difficult and costly, and there will be no interested user group that will be willing to raise funds or public awareness for long term protection of the areas. While wilderness areas or sanctuaries can be good for fisheries, they need to be planned and implemented so that the public can support them. A general discussion ensued regarding sanctuaries and "no take" areas, with the general feeling that sanctuaries will happen at

some time in the future. **Murray suggested that the Recreational Fisheries Advisory Panel make a recommendation to the full Advisory Panel that the group hold an informational session on marine sanctuaries. The Panel agreed.**

### **Joint Session Continues**

The oyster issue was revisited in the joint meeting and the recreational panel agreed with the commercial panel on this issue and together request the following action. The following motion passed unanimously:

**The Commercial/Recreational Advisory Panel respectfully requests that the S-FFMC take up this issue with the full Commission and that a response be addressed to the FDA opposing this proposal which would effectively eliminate any raw shellfish market in the United States. A letter should acknowledge the existing safeguards already in place, the education programs to identify at-risk individuals, and the Interstate Shellfish Sanitation Conference (ISSC) efforts, working in cooperation with the FDA, the states, and industry on this issue.**

### **Other Business**

Based on a recommendation from the Recreational Fisheries Advisory Panel, the Panel agreed that a meeting dedicated to marine refuges or sanctuaries would be very informative and recommended that the staff could invite speakers to the next panel meeting to present both sides of the reserve issue. The staff will try to get two or three speakers who can provide the pro's and con's of the issue without being overly biased on one side.

**There being no further business, the meeting was adjourned at 4:05 p.m.**

## Attachment 1

Table 1. Minimum data elements for the ComFIN trip ticket program (T = information collected on a trip ticket, B = information collected on trip ticket or via survey).

	DATA ELEMENT	DESCRIPTION	COLLECTION METHOD
1	Trip date	The date (dd/mm/yyyy) that the trip started. A trip is defined as the time the vessel left the dock to the point that the product was transferred	T
2	Form type/version #	Version identification number for the ComFIN trip ticket. Criteria will be developed to determine when a new version of the form will be identified	T
3	Form/Trip ticket number	Unique identifier for a specific trip. This will be printed on the actual trip ticket form. The numbers will be consecutive and the first two digits will be unique state code	T
4	Vessel ID	Coast Guard or state registration number (will be linked to unique vessel identifier. These identifiers must be trackable through time and space.)	T
5	Participant ID	Fisherman license# (will be linked to unique participant identifier [SSN, fed tax id#, etc.]. These identifiers must be trackable through time and space)	T
6	Species	Code for the species of fish caught. Each species is to be identified separately. Use of market or generalized categories should be avoided within species code fields or variables. See appendix xx (to be adopted/developed)	T
7	Quantity landed	The amount of each marine species that is landed and/or sold.	T
8	Landing condition	Code for condition landed (whole, gutted, headed, etc.). See appendix xx (to be adopted/developed)	T
9	Quantity units	Code for the units used for measuring landings (pounds, kilograms, etc.). See appendix xx (to be adopted/developed)	T
10	Market size range	Actual size range of species landed by market category	T
11	Ex-vessel value or Ex-vessel price	The total dollar value for each species that is landed or sold by market category  The price per unit weight paid for each species that is landed or sold by market category	T
12	County (minimum) or port (optional) landed	Code that will provide the location within a state where the product was transferred. See appendix xx (to be adopted/developed).	T
13	State landed	Code that will identify the state where the product was landed or unloaded. See appendix xx (to be adopted/developed)	T
14	Dealer ID	This element is an identifier for the dealer at the point of each transaction. In the case of multiple dealers, the landings would be reported separately for each dealer.	T
15	Unloading date	Date (dd/mm/yyyy) the landed species was transferred to a dealer.	T
16	Market category	Code that will specify any market or grade categories that affect price, usually size related.	T
17	Primary Gear	Code which describes the primary type of gear used to catch the landed species.	T
18	Gear(s)	Code(s) which identify(s) all the gears used to catch the landed species.	T
19	Primary Area fished	Code which provides a general location where the fishing occurred, using NMFS/state water body codes. The distance from shore where fishing occurred [inshore, inland (0-3 mi or 0-9 mi depending on state), EEZ (3-200 mi or 9-200 mi depending on state), >200 mi.]	B
20	Area fished	Code that provides all locations where fishing occurred, using NMFS/state water body codes.	B
21	Disposition	Code which describes the fate of the catch (i.e. discards, bait, personal consumption, etc). Disposition of discards should be recorded (i.e. regulatory vs. other discards, dead or alive, etc.)	B
22	Quantity of gear	The amount of gear employed	B
23	Days at sea	Days from the start of the trip to the return to the dock	B
24	Number of crew	Number of crew on each trip, including captain.	B
25	Fishing time	Total amount of time (hrs) that gear was in the water and/or amount of search time for each trip	B
26	Number of sets	Total number of sets or tows of gear during a trip	B

Table 2. Standard measurements of quantity of gear, fishing time, and number of sets for specific gear types.

TYPE OF GEAR	QUANTITY	FISHING TIME	NUMBER OF SETS
Traps and Pots	Number traps pulled	Mean soak time	
Trawls	Number towed	Total tow time	Number of tows
Gill Nets Entanglement	Float line length for string	Soak time	Number of string (net) hauls
Longlines	Number gangions/hooks	Soak time	Number of hauls
Dredges	Number pulled	Total tow time	Number of tows
Nets	Number of pieces of apparatus		
Rod and Reel	Number of lines (Number of hooks is secondary)	Soak time	
Purse Seines	Length of floatline	Search time	Number of sets
Hand Gear	Number of lines (Number of hooks is secondary)	Soak time	
Harpoons	Number	Search time	Number of harpoons

Table 3. Prioritized list of validation methods to be used by FIN partners to verify the accuracy of commercial catch and effort information submitted through the ComFIN.

VALIDATION METHOD	DEFINITION / CRITERIA	COMMENTS
Fishery-Dependent and -Independent Surveys	<p>Any fishery-dependent survey detailed in the FIN Program Design Document, or any fishery-independent survey. A four-prong approach using the following methods is preferred:</p> <ol style="list-style-type: none"> <li>1. Port Sampling Programs</li> <li>2. At-Sea Observer Programs</li> <li>3. Law Enforcement Presence               <ul style="list-style-type: none"> <li>▶ overflights</li> <li>▶ boarding and summons reports</li> <li>▶ vessel tracking system</li> <li>▶ audits and inspections</li> <li>▶ violations hotlines</li> <li>▶ customs data</li> <li>▶ consistency of penalties between states</li> </ul> </li> <li>4. Distribution of periodic data summaries to fishermen for self-verification</li> </ol>	<p>Presence at the docks or on vessels is the best method of verification and should be given highest priority.</p> <p>Provides direct liaison between the fishermen and fisheries managers.</p> <p>For trip and discard verification.</p> <p>Through direct presence of law enforcement personnel at the docks or through the listed methods.</p> <p>Periodic distribution of standard data summaries to fishermen and dealers provided through the FIN data management system</p>
Mandatory Random Fish-House/Fishermen Audits and Inspections	<p>Audits and inspections of records either on-site or at an agency of records kept by fishermen and dealers of productions, purchases, and sales of fishery products in comparison to those data actually submitted to and received by the reporting agency.</p> <ul style="list-style-type: none"> <li>▶ Record content, submission frequency, and retention period specified by federal and/or state statutes or other regulations.</li> <li>▶ Statistically valid random selection of a portion of the fishermen and/or dealers involved in fisheries or a particular stratum of a fishery to assess compliance rates with reporting rules and accuracy of reporting data.</li> <li>▶ Scope of audits may require additional information to that reported in order to verify accuracy of reported data. Auditors must be granted official access to these additional sources of information as needed to perform such audits.</li> </ul>	<p>Should be used only on an as-needed basis.</p>
Other Methods	<ul style="list-style-type: none"> <li>▶ Random additional logbooks</li> <li>▶ Independent reports from fishermen and dealers of certain data elements</li> <li>▶ Fishermen permit qualification</li> <li>▶ Quota monitoring activities</li> <li>▶ Any combination of the above</li> </ul>	<p>Should be used only on an as-needed basis.</p>

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DEPARTMENT OF HEALTH AND HUMAN SERVICES

Food and Drug Administration  
[Docket No. 98P-0504]

Performance Standard for *Vibrio Vulnificus*; Request for Comments

AGENCY: Food and Drug Administration, HHS.

ACTION: Notice.

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SUMMARY: The Food and Drug Administration (FDA) has received a petition from the Center for Science in the Public Interest (CSPI) requesting that the agency establish a performance standard of ``nondetectable'' for the marine bacterium *Vibrio vulnificus* in raw molluscan shellfish harvested from waters that have been linked to illnesses from this organism. FDA is requesting information and views from the general public on CSPI's request and on several specific questions relating to the petition.

DATES: Submit written comments by April 21, 1999.

ADDRESSES: Submit written comments to the Dockets Management Branch (HFA-305), Food and Drug Administration, 5630 Fishers Lane, rm. 1061, Rockville, MD 20852.

FOR FURTHER INFORMATION CONTACT: Patricia S. Schwartz, Center for Food Safety and Applied Nutrition (HFS-401), Food and Drug Administration, 200 C St. SW., Washington, DC 20204, 202-418-3133.

SUPPLEMENTARY INFORMATION:

I. Background

*V. vulnificus* is a marine bacterium that can cause infection in humans as a result of contact through cuts or wounds and consumption of food containing the organism. The association of foodborne illness with

*V. vulnificus* is relatively recent; the first reported cases occurred in the 1970's. To date, the food almost exclusively associated with illness from *V. vulnificus* is raw oysters harvested from States bordering on the Gulf of Mexico. However, the bacterium is also found in marine waters and in shellfish outside the Gulf region, although raw

oysters from waters outside the Gulf region have not been definitively implicated in any cases of illness.

While *V. vulnificus* can infrequently cause gastroenteritis in healthy individuals, it can cause much more serious, sometimes deadly, septicemia in certain compromised individuals. The conditions that FDA believes put consumers at risk for septicemia from *V. vulnificus* include alcoholic liver disease, diabetes, hemochromatosis, chronic hepatitis B and C, and depressed immune system function. However, the majority of cases of septicemia have occurred in consumers with alcoholic liver disease. FDA estimates that the at-risk population in the United States falls within a range of 12 to 30 million. The number of septicemia cases reported from *V. vulnificus* each year range from a low of 9 in 1990 and 1991 to a high of 33 in 1996. Septicemia in medically compromised individuals has proven fatal in about 50 percent of reported cases. The agency's policy since 1993 has been that at-risk

individuals should only consume molluscan shellfish that have been adequately cooked, as thorough cooking kills *V. vulnificus*.

FDA is supporting ongoing research directed toward answering several questions about *V. vulnificus*, including research: (1) To identify the characteristics of those strains of *V. vulnificus* that are

pathogenic to humans, (2) to describe the effect of environmental conditions on the occurrence of these strains in water and in shellfish, (3) to determine whether there is an infectious dose or doses of the organism in susceptible humans, (4) to determine whether there are other factors or conditions that may put consumers at risk of

septicemia; and (5) research on other matters. To date, FDA has cosponsored two national scientific workshops on *V. vulnificus* to determine what is known and what needs to be learned about this organism.

In addition, since 1993, the agency has expended considerable effort on education directed toward at-risk populations to warn them to

avoid raw shellfish. Recently, the agency has supported point-of-purchase advisories directed toward at-risk individuals.

FDA has also worked with the Interstate Shellfish Sanitation Conference (ISSC), a cooperative entity (whose members include FDA, the

States, and the shellfish industry) dedicated to the production of safe

and sanitary molluscan shellfish, to address issues related to *V. vulnificus*. ~~The agency participated with the ISSC in developing the post-harvest refrigeration requirements that were established by the ISSC for *V. vulnificus* in oysters. Together with the ISSC, FDA is currently studying the levels of these organisms in oysters to which consumers are exposed at retail.~~

FDA recognizes that innovative post-harvest technologies may also reduce or eliminate *V. vulnificus* from raw oysters. To foster this approach, the agency has provided labeling advice to a company that is

marketing oysters that have been subject to a post-harvest treatment involving low temperature pasteurization (see the following paragraphs). The agency hopes that companies pursuing other potential post-harvest technologies will also seek FDA's labeling assistance.

## II. The Citizen's Petition

On June 29, 1998, CSPI filed a citizen petition that requests that FDA issue regulations under the Federal Food, Drug, and Cosmetic Act or Public Health Service Act requiring nondetectable levels of *V. vulnificus* in raw molluscan shellfish harvested from waters that have been linked to illnesses or deaths

[[Page 3301]]

from this bacterium. *V. vulnificus* may be detected in virtually all oysters from such waters, at least during warm weather months. Thus, the practical effect of mandating a performance standard of 'nondetectable' would be to impose post-harvest treatment requirements on all oysters from these waters.

The petition cites one such post-harvest treatment, that of the AmeriPure Co., which involves a mild heat treatment of in-shell oysters that is capable of killing *V. vulnificus*. FDA has reviewed data submitted by the AmeriPure Co. and those data do indicate that its process is capable of reducing *V. vulnificus* in oysters to nondetectable levels.

## III. Request for Information and Views

Under FDA's administrative regulations (21 CFR 10.30(h)(3)), the agency, when reviewing a petition, may employ various procedures, including publishing a Federal Register notice asking for information and views. Accordingly, FDA is hereby soliciting comment on the issues raised by the CSPI petition. However, FDA is especially interested in comments, with supporting data where appropriate, on the following questions:

1. Is the AmeriPure Co. technology readily employable by the shellfish industry; if not, what barriers exist, and what steps could be taken to reduce or eliminate those barriers?
2. Other than the AmeriPure Co. process, what technologies, both present and anticipated, could significantly reduce the number of *V. vulnificus* in oysters while retaining the sensory qualities of a raw oyster? What is known about the ability of such technologies to reduce the number of *V. vulnificus* to nondetectable levels?
3. How reliable are such technologies? May they practically be required for an entire industry or a significant portion of that industry?
- 4. Would a performance standard have to be as low as 'nondetectable?' Do data exist that would permit the setting of a



performance standard above ``nondetectable?'' If so, at what level? Should the fact that *V. vulnificus* is found at low levels (less than 100 Most Probable Number/gram) in oysters in months (January and February) in which there have been no reported illnesses be taken into account when establishing a performance standard or level?

5. Should a performance standard apply to all raw molluscan shellfish or only to oysters?

6. What would be the quantifiable and nonquantifiable costs of a performance standard? Who would bear the costs? What would be the effect on costs, and the distribution of costs, if there was only one, patented process that could be used to meet the performance standard? What would the effect on costs be if a standard of ``nondetectable'' were put in place for all pathogens or for all raw molluscan shellfish?

7. What would be the quantifiable and nonquantifiable benefits of a performance standard? Who would enjoy the benefits?

8. Another marine pathogen, *V. parahaemolyticus*, has caused over 700 reported cases of illness (gastroenteritis) during 1997 and 1998. There has been one death reported to the Centers for Disease Control and Prevention and several hospitalizations. Illnesses from *V. parahaemolyticus* have occurred from oysters harvested outside of the Gulf of Mexico region.

Should a performance standard apply only to *V. vulnificus* or should it apply to other *Vibrio* species that post-harvest treatment might be able to reduce to nondetectable levels?

#### IV. Request for Comments

Interested persons may, on or before April 21, 1999, submit to the Dockets Management Branch (address above) written comments regarding this notice. Two copies of any comments are to be submitted, except that individuals may submit one copy. Comments are to be identified with the docket number found in brackets in the heading of this document. Received comments may be seen in the office above between 9 a.m. and 4 p.m., Monday through Friday.

Dated: January 13, 1999.  
William K. Hubbard,  
Associate Commissioner for Policy Coordination.  
[FR Doc. 99-1361 Filed 1-20-99; 8:45 am]  
BILLING CODE 4160-01-F

> PERFORMANCE STANDARD FOR VIBRIO VULNIFICUS; REQUEST FOR COMMENTS  
> January 21, 1999  
> Federal Register (Volume 64, Number 13)  
> Page 3300-3301  
> AGENCY: Food and Drug Administration, HHS.  
> ACTION: Notice.  
>  
> SUMMARY: The Food and Drug Administration (FDA) has received a petition  
on  
from  
> the Center for Science in the Public Interest (CSPI) requesting that  
the  
> agency establish a performance standard of ``nondetectable'' for the  
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> bacterium *Vibrio vulnificus* in raw molluscan shellfish harvested from  
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> FOR FURTHER INFORMATION CONTACT: Patricia S. Schwartz, Center for Foo  
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> Safety and Applied Nutrition (HFS-401), Food and Drug Administration,  
> 200 C St. SW., Washington, DC 20204, 202-418-3133.  
>  
>

fishermen, does not want the information distributed. TSA does not represent the entire industry. The Subcommittee decided to prepare a questionnaire to be mailed to the real-time data distribution list asking their feelings on the data distribution and if the data is useful and will they like to continue receiving the information. It was also suggested to do a random sampling of shrimp licenses and mail to those people also if they're not already on the list. The Subcommittee will analyze the results and if the majority wants this information distributed, they will again approach NMFS and GMFMC to ask to start distributing the information again. This will be discussed at the August meeting.

J. Rester stated there was a positive response to the red snapper data distribution at the end of last year. **J. Hanifen moved to produce red snapper data summaries at the end of the Summer and Fall Shrimp/Groundfish Surveys. S. Heath seconded it and it passed unanimously.**

### **Calibration Comparisons Between Vessels**

B. Pellegrin presented the approach and conclusions (ATTACHMENT 2) of the calibration comparisons between the vessels used for SEAMAP surveys which are the NOAA Ship OREGON II, R/V PELICAN, TOMMY MUNRO and A. E. VERRILL. In conclusion, he stated there are no significant differences between the vessels (see attachment). S. Nichols said he was satisfied with the results and the SEAMAP data will be melded with the other databases and used for the upcoming red snapper stock assessment.

### **Work Group Reports**

Environmental Data - M. Kasprzak presented the final Environmental Data Work Group Report which includes all suggested changes. She said all thermocline data references were deleted and she reviewed the chlorophyll recommendations that were made for using the extracted method for chlorophyll analysis. **J. Hanifen moved to accept the Environmental Data Work Group Report and all recommendations. T. Cody seconded it and it passed unanimously.** The report and all recommendations will be incorporated into the SEAMAP Operations Manual.

M. Kasprzak then presented the draft meta data sheet that the Environmental Data Work Group was instructed to develop. The Subcommittee accepted the meta data sheet and agreed to use it for the upcoming plankton cruise for a field test.

Data Coordinating - K. Savastano distributed the Data Management report and stated all cruise data in the SEAMAP on-line data base have been reformatted to SEAMAP versions 3.0, 3.1, 3.2 or 3.3. Data processing of the 1998 data and 1982-1987 Gulf data is in progress. Processing of the 1997 Atlas data has been completed. Two hundred twenty-six data requests have been received to date and all have been completed. Re-engineering of the main frame SEAMAP software to use the ORACLE data base software is in its final stage. The SEAMAP on-line data base now contains 445 cruises with a total of 2,839,803 records. K. Savastano then gave a slide presentation on the SEAMAP Oracle Data Management System Capabilities.

### **Other Business**

D. Waller reported on the development of a SEAMAP data web page. D. Waller has discussed this with personnel at USM and they seem interested in helping to develop the web page for a minimal charge. The actual cost of development is still undetermined. The web page could be designed and running as early as June. D. Waller and J. Rester will meet with USM personnel and keep the Subcommittee informed on the development.

J. Shultz reported that there will be no reef fish cruises this summer because a ship is not available.

M. Leiby reported that the FMRI is considering not continuing to house the SEAMAP Archiving Center because it does not pay for itself. The Subcommittee decided to ask the Plankton Work Group to provide M. Leiby with justification for continuing to house the SEAMAP Archiving Center so he may provide it to the FMRI Director. M. Leiby will keep the Subcommittee informed of this situation.

**There being no further business, the meeting adjourned at 5:12 p.m.**

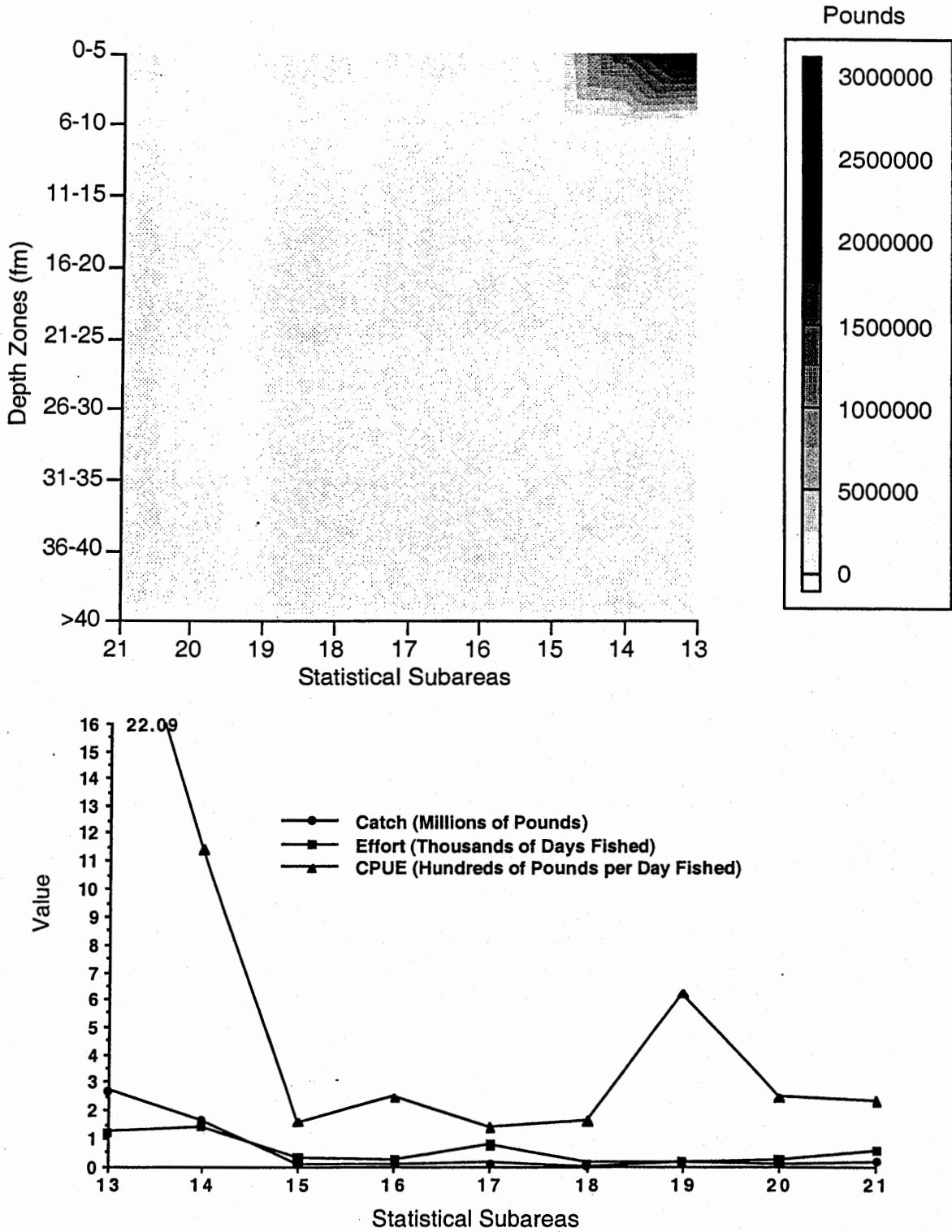


Figure 1. Offshore brown shrimp catch, effort and CPUE during May 1998.

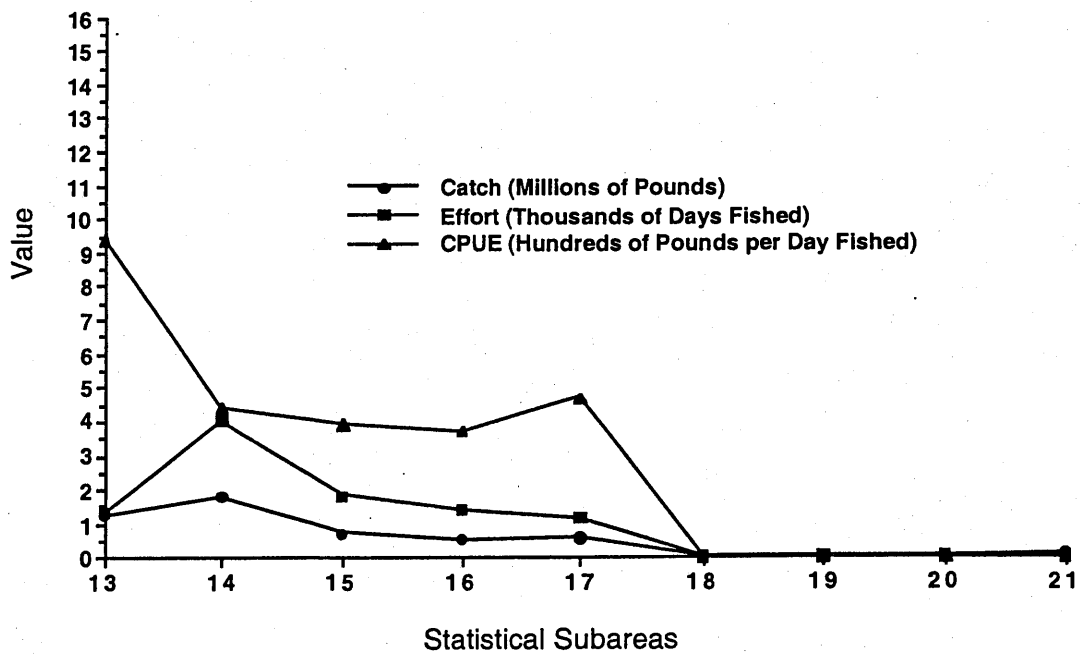
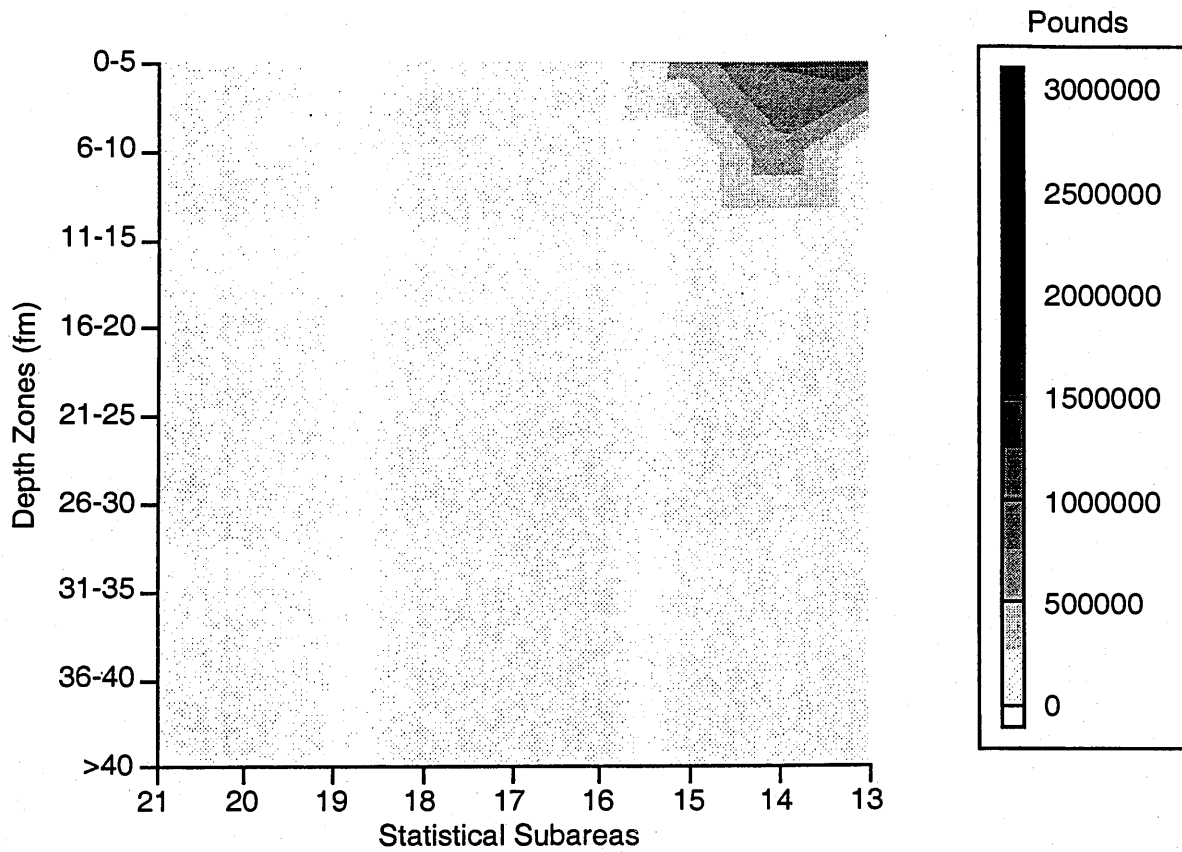


Figure 2. Offshore brown shrimp catch, effort and CPUE during June 1998.

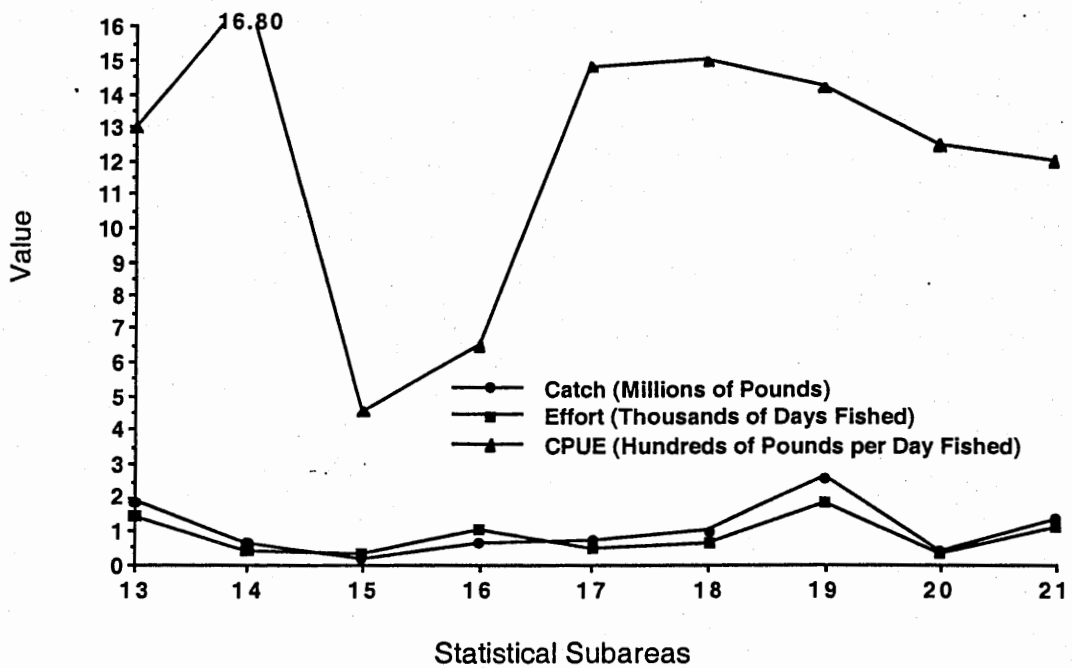
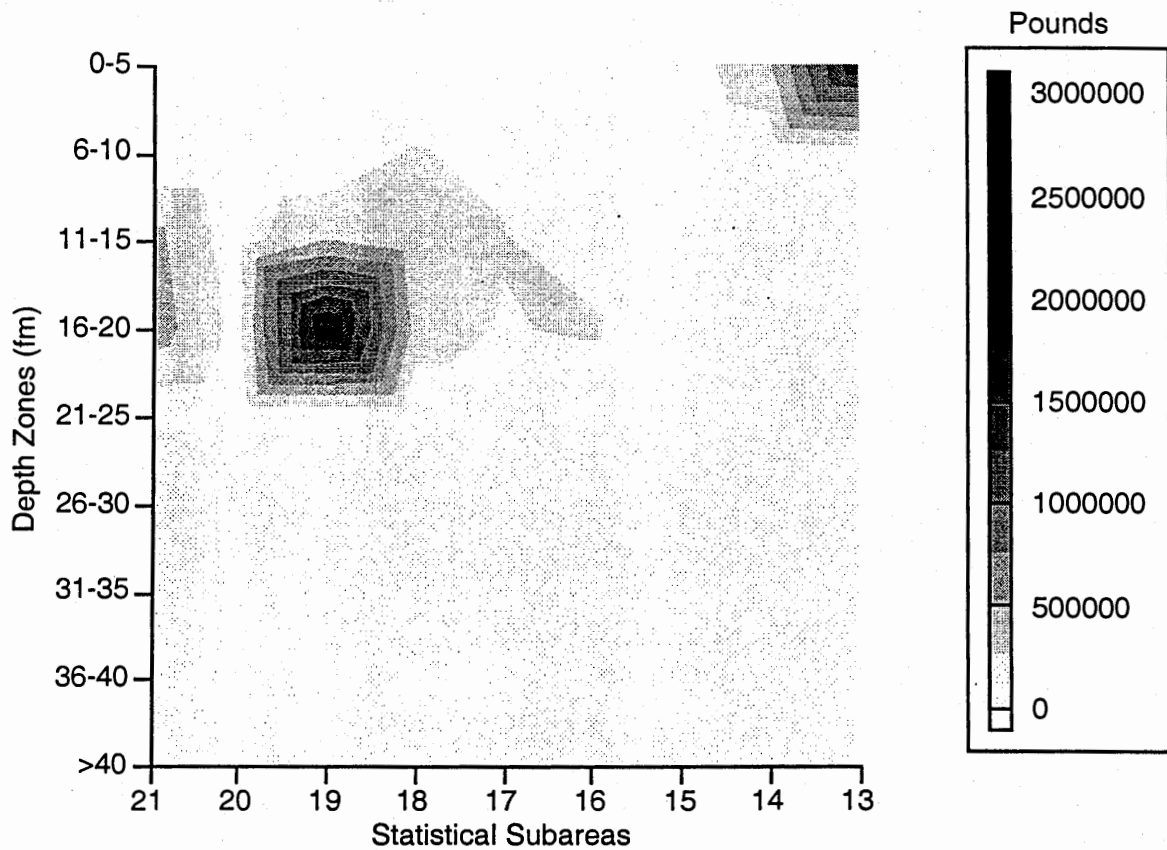


Figure 3. Offshore brown shrimp catch, effort and CPUE during July 1998

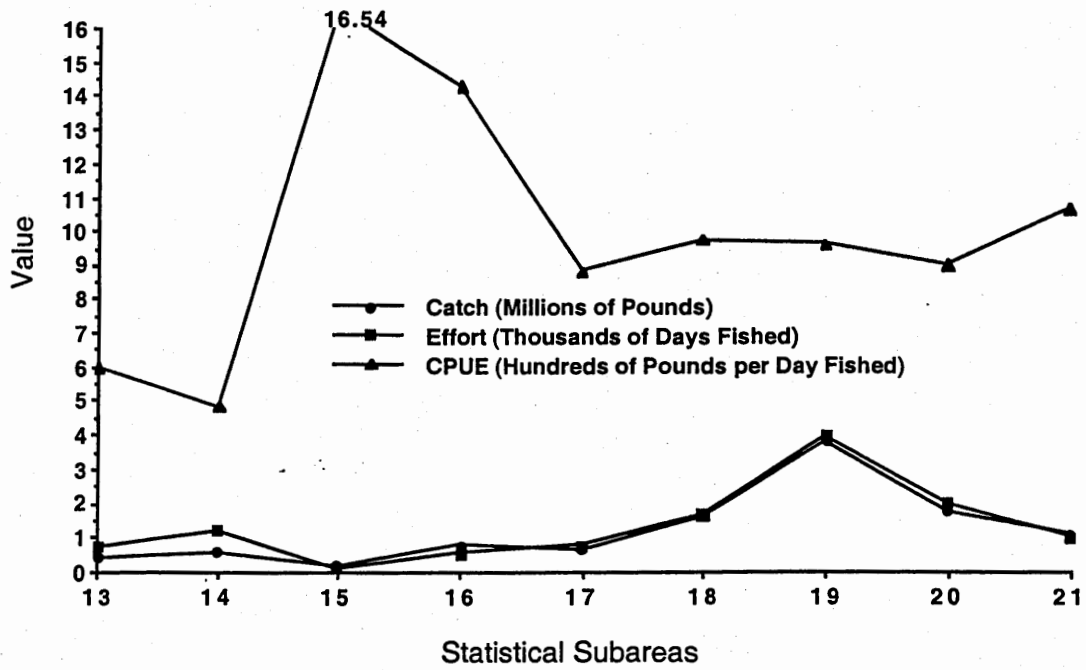
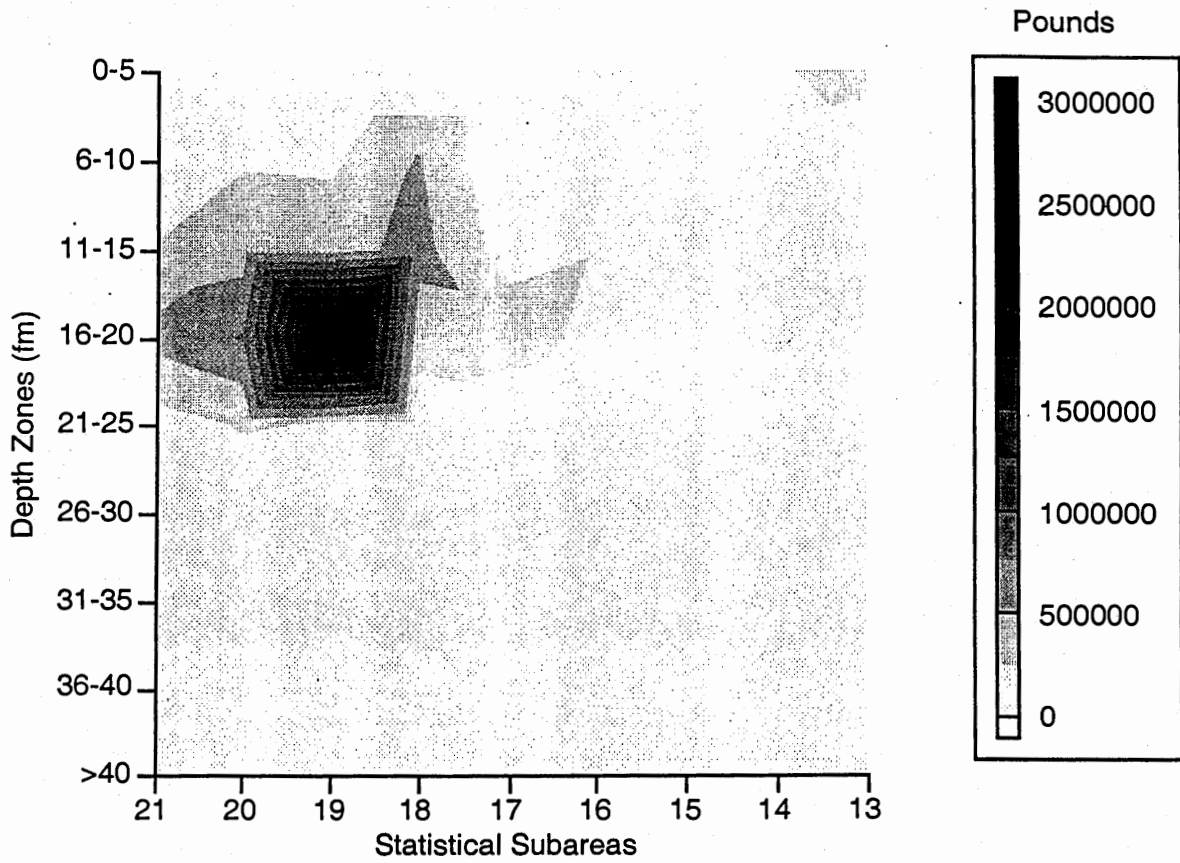


Figure 4. Offshore brown shrimp catch, effort and CPUE during August 1998.



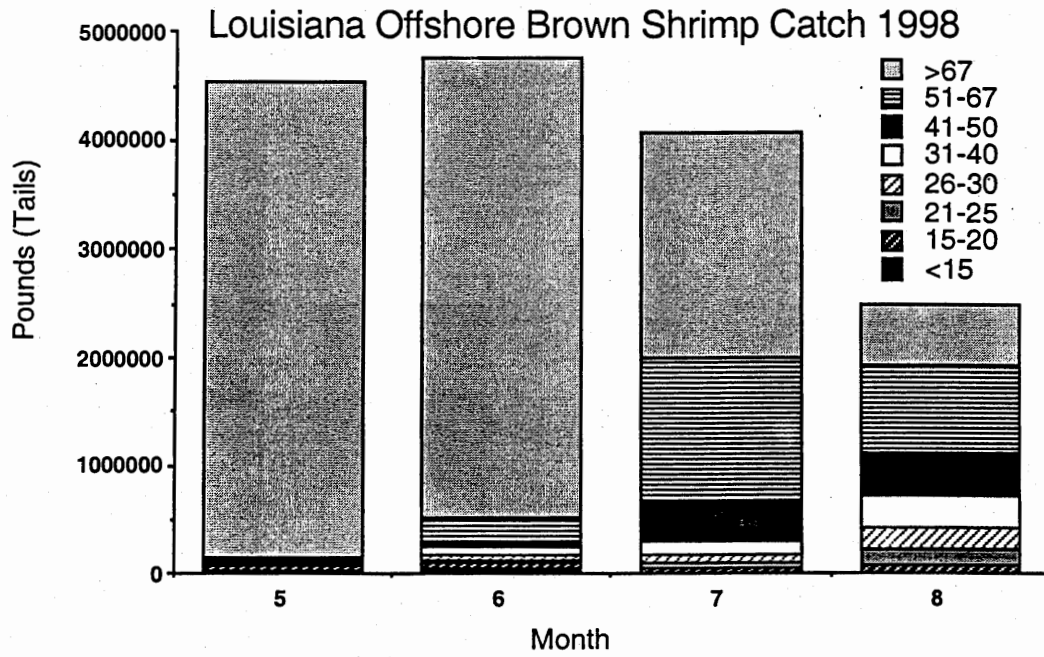


Figure 5. Size composition of brown shrimp taken from offshore Louisiana.

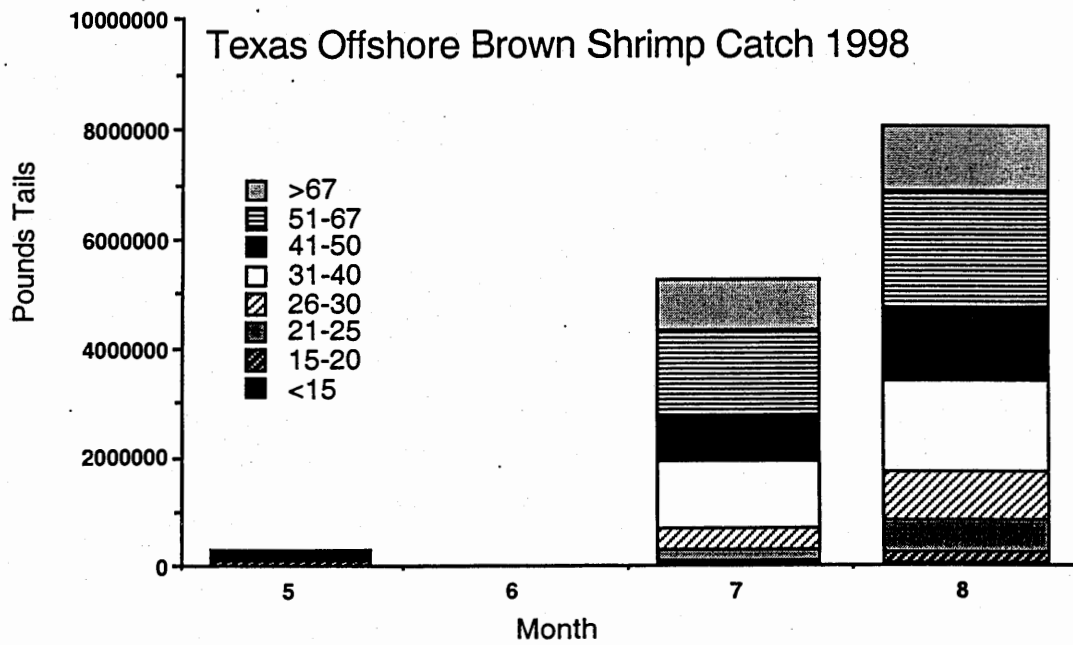


Figure 6. Size composition of brown shrimp taken from offshore Texas.

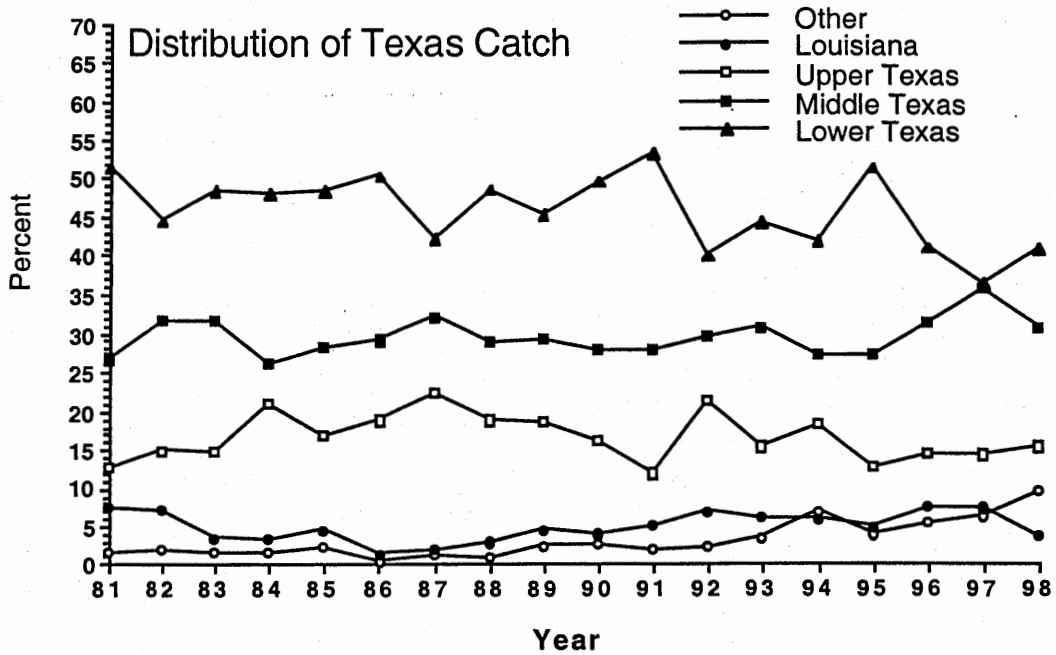


Figure 7. Distribution of May through August total shrimp catch from Texas offshore waters, 1981 - 1998.

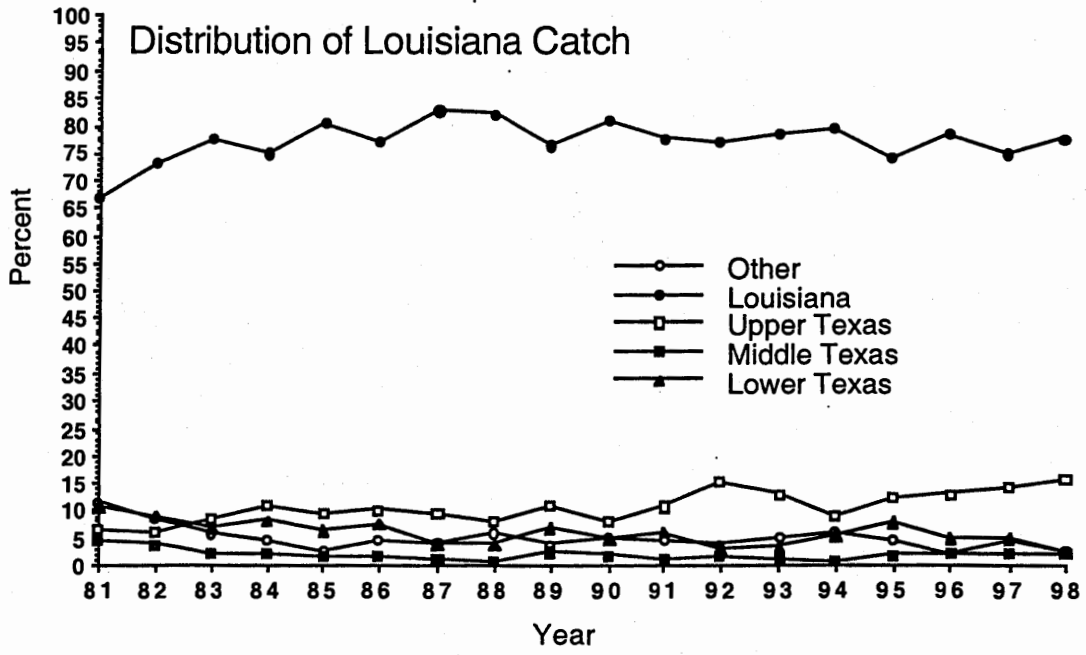


Figure 8. Distribution of May through August total shrimp catch from Louisiana offshore waters, 1981 - 1998.

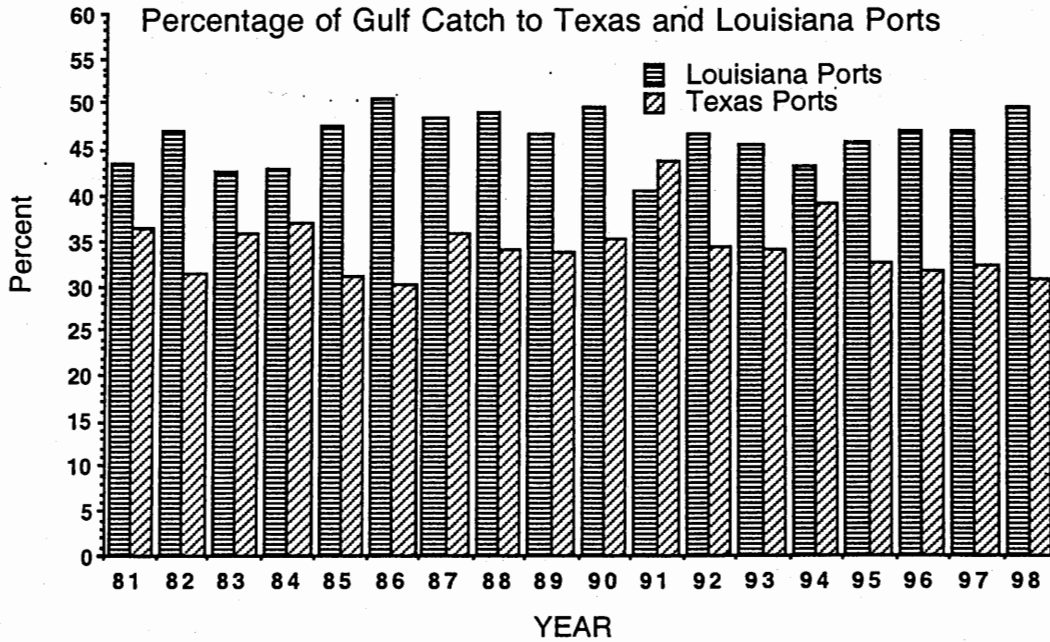


Figure 9. Distribution of May through August Gulf of Mexico shrimp production to all Texas and Louisiana ports, 1981 - 1998

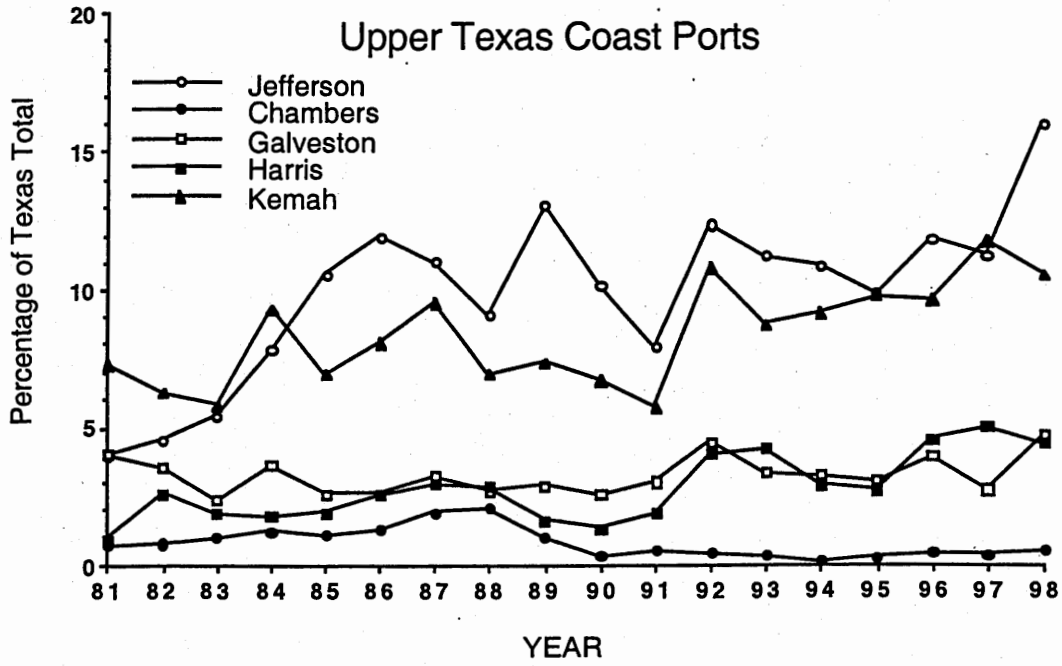


Figure 10. Distribution of May through August Texas landings by upper coast ports, 1981 - 1998.

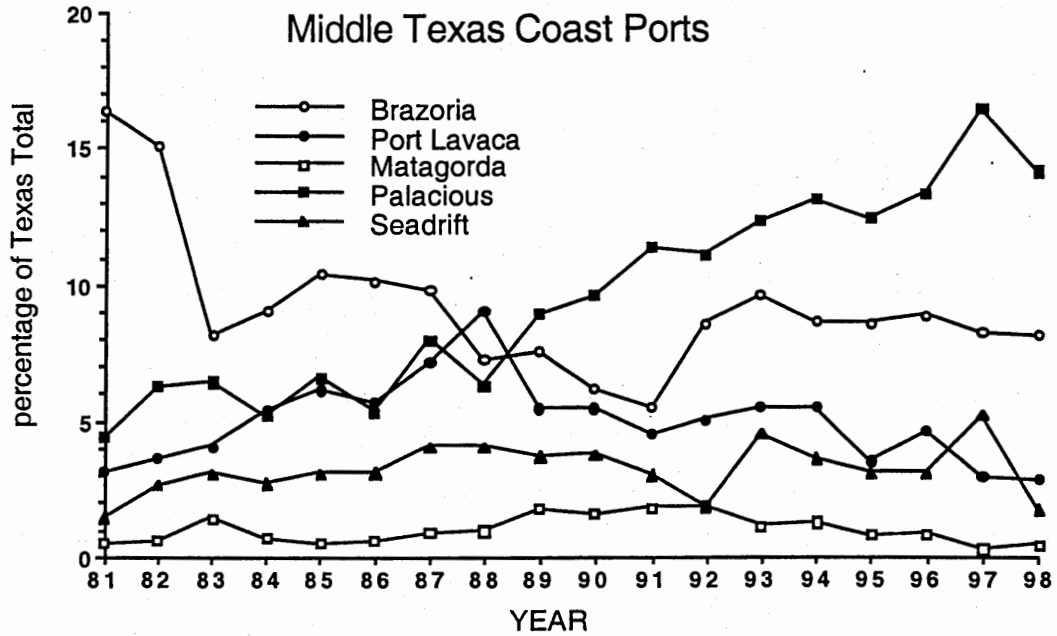


Figure 11. Distribution of May through August Texas landings by middle coast ports, 1981 - 1998.

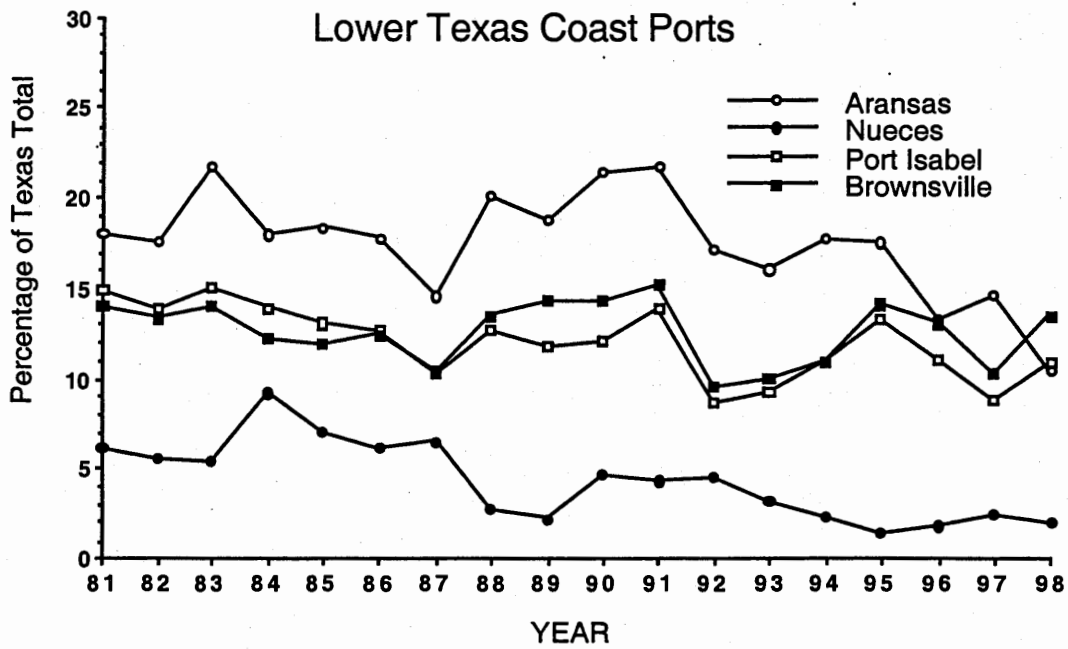


Figure 12. Distribution of May through August Texas landings by lower coast ports, 1981 - 1998.



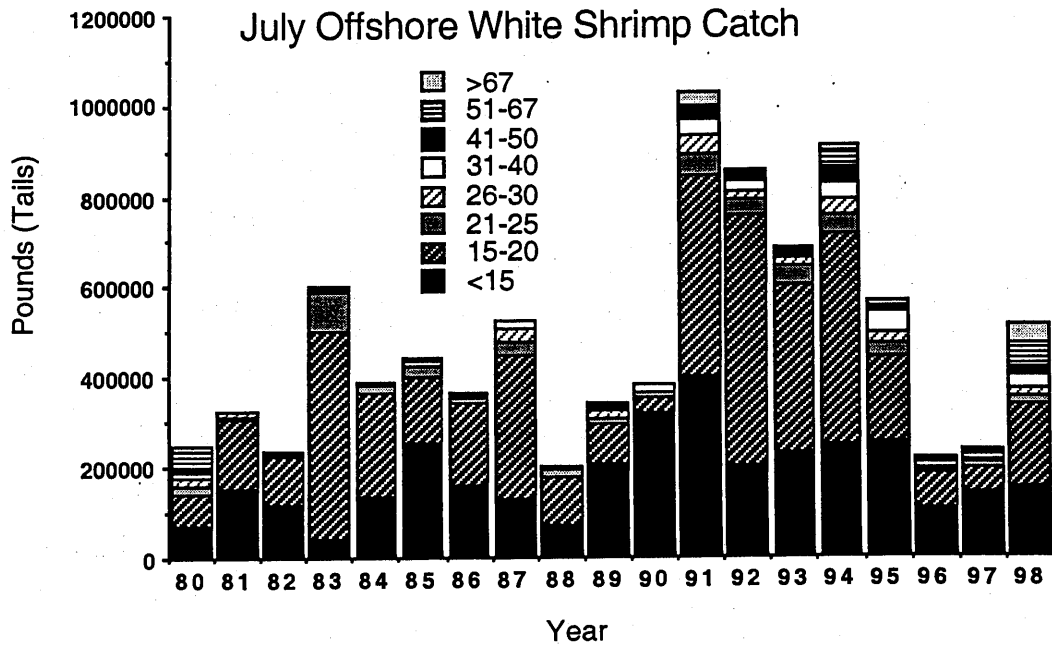


Figure 13. White shrimp size distribution off the Texas coast from 1980 - 1998 during July.

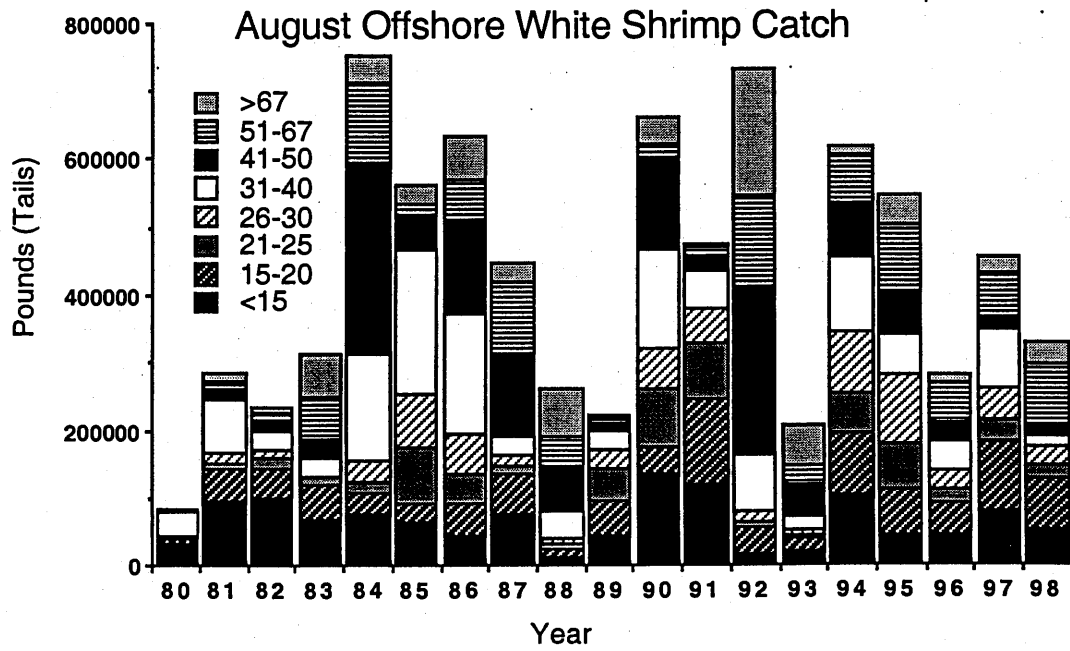


Figure 14. White shrimp size distribution off the Texas coast from 1980 - 1998 during August.

# **Comparisons of Catch Rates Between Two Research Vessels Under A Paired Comparison Design**

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# Vessel Comparison Approach

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- Used species approach rather than total catch
- Attempted to compare species which comprised 90% of most frequently caught organisms during an experiment
- Valid observations were defined as paired tows in which each vessel's net captured a species of interest
- Catch rates were log-transformed to stabilize heterogeneous variances
- Employed multiple regression with dummy variables representing species, to predict catch rates of *NOAA Ship Oregon II* from catch rates of state vessels

# Vessel Comparison Approach

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Why regression technique?

- Relationship between vessels was assumed to be linear
- Plotting data essentially verified the above assumption
- Regression technique provides the ability to develop one model which describes the relationships of catch rates between vessels within species of interest
- This “full model” can be resolved into component simple linear models, each representing a species of interest
- Greater control of Type I error,  $\alpha$  (erroneously rejecting the null hypothesis or erroneously concluding there's a significant difference in catch rates between vessels)

# Vessel Comparison Approach

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## Potential Model Forms

$$\log(C_{OII}) = \beta_0 + \beta_1(\log C_V) + \varepsilon$$

$$C_{OII} = (e^{\beta_0})(C_V)^{\beta_1} + \varepsilon$$

$$= (\text{multiplicative component})(C_V)^{(\text{exponential component})} + \varepsilon$$

- $\beta_0=0$  and  $\beta_1=1$  implies no significant difference in catch rates between vessels
- $\beta_0=0$  and  $\beta_1 \neq 1$  yields exponential model
- $\beta_0 \neq 0$  and  $\beta_1=1$  yields multiplicative model
- $\beta_0 \neq 0$  and  $\beta_1 \neq 1$  yields model with multiplicative and exponential components

# Vessel Comparison Approach

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## Example

- Assume  $k=3$  species of interest then introduce  $k-1$  dummy variables,  $S_1$  and  $S_2$

- Develop full model,

$$C_{OII} = \beta_0 + \beta_1(C_V) + \beta_2(S_1) + \beta_3(S_2) + \beta_4(C_V)(S_1) + \beta_5(C_V)(S_2) + \epsilon$$

where,

Catch for species 1 is represented by  $S_1=1, S_2=0$

Catch for species 2 is represented by  $S_1=0, S_2=1$

Catch for species 3 is represented by  $S_1=0, S_2=0$

- Resolve into component species models

$$\text{Species 1 } (S_1=1, S_2=0): C_{OII} = (\beta_0 + \beta_2) + (\beta_1 + \beta_4)(C_V) + \epsilon$$

$$\text{Species 2 } (S_1=0, S_2=1): C_{OII} = (\beta_0 + \beta_3) + (\beta_1 + \beta_5)(C_V) + \epsilon$$

$$\text{Species 3 } (S_1=0, S_2=0): C_{OII} = (\beta_0) + (\beta_1)(C_V) + \epsilon$$

# Hypothesis Tests

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## Tests of Interest

- Significantly fitting full model
  - Resolve into component models and test for coincidence
    - If coincident (all species responding similarly to both vessels nets)
      - Slope=1?
      - Y-intercept=0?
    - If not coincident (not all species responding similarly to both vessels nets) inspect model parameters to determine cause of significant difference
    - Inspect plots for influential values
  - Inspect outliers and possibly delete in order to achieve a significantly fitting full model
  - Performed simple linear regression disregarding species (assumes all species respond similarly to both vessels nets)
    - Slope=1?
    - Y-intercept=0?



# Hypothesis Test

Paired Comparison Towing

$$H_0 : \begin{pmatrix} \beta_0 = 0 \\ \beta_1 = 1 \\ \beta_2 = 0 \\ \vdots \\ \beta_{2k-1} = 0 \end{pmatrix}$$

# Paired Comparison Towing

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## Overview

- NOAA Ship Oregon II - RV Tommy Munro
  - Summer 1987 (3 tows)
  - Fall 1987 (4 tows)
  - Fall 1990 (4 tows)
  - Fall 1996 (60 tows)
- NOAA Ship Oregon II - RV Pelican
  - Summer 1987 (14 tows)
  - Fall 1989 ( 10 tows)
  - Summer 1990 (10 tows)
  - Summer 1991 (9 tows)

# Paired Comparison Towing

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## Overview (continued)

- NOAA Ship Oregon II - RV A.E. Verrill
  - Fall 1990 (4 tows)
- RVs Tommy Munro - A.E. Verrill
  - Fall 1987 (4 tows)
  - Summer 1990 (4 tows)
  - Summer 1993 (22 tows)
- RVs Tommy Munro - Pelican
  - Summer 1994 (49 tows)

# **NOAA Ship Oregon II - R/V Tommy Munro**

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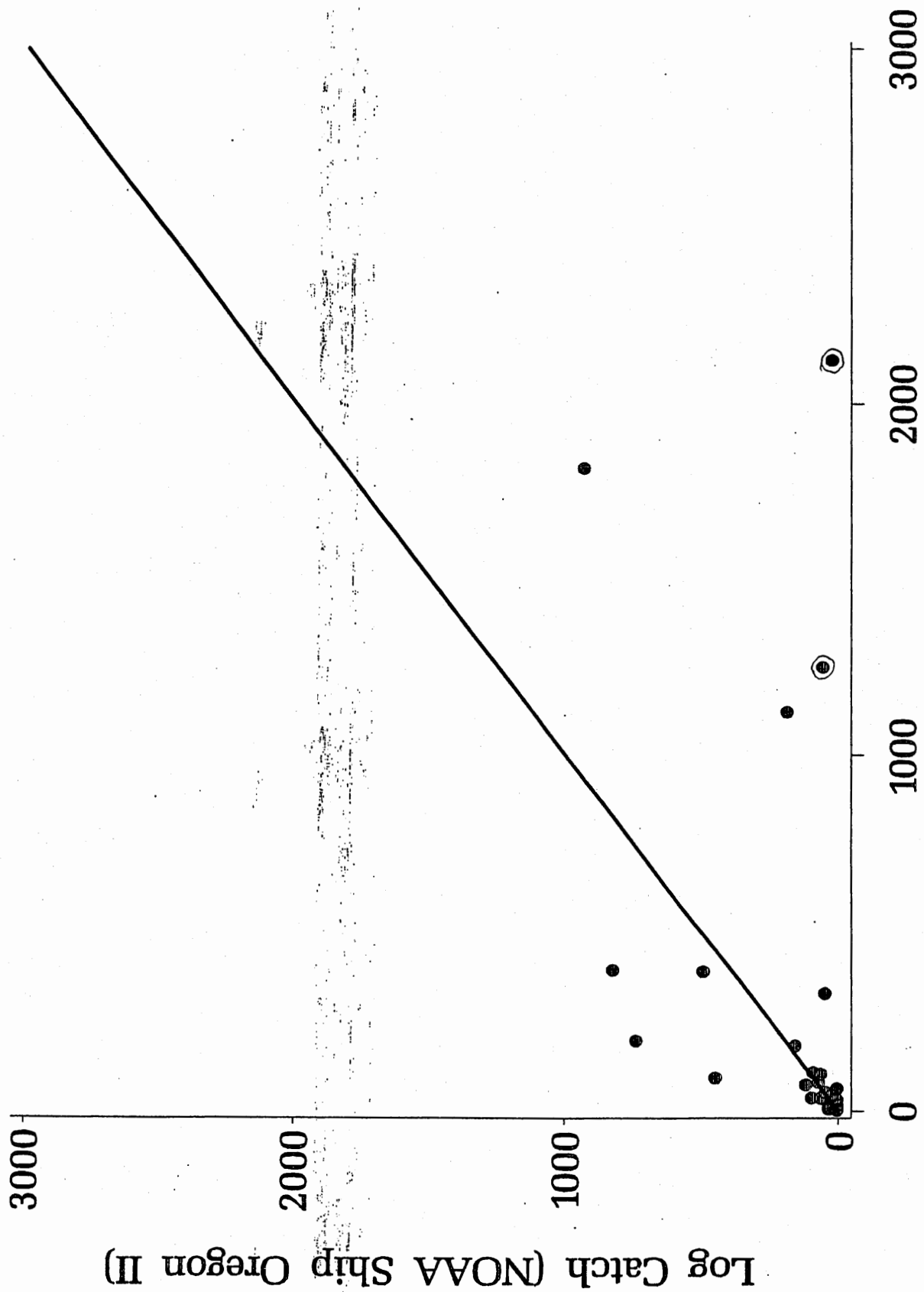
## Five Experiments

- June, 1987 (3 paired tows, 19 observations)
- October, 1987 (4 paired tows, 22 observations)
- November, 1990 (4 paired tows, 67 observations)
- July, 1991 (3 paired tows, hypoxic area)
- October, 1996 (60 paired tows, 648 observations)

Numbers caught and ratios (set to unity) of 18 species caught by NOAA Ship Oregon II and RV Tommy Munro during paired comparison towing (June, 1987; 3 tows, 28 observations).

	Name	Capture Frequency	Numbers Caught		Ratio of Respective Vessels
			NOAA Ship Oregon II	RV Tommy Munro	
1	Gulf butterfish	3	1,384	816	1.70: 1.00
2	Striped anchovy	3	923	369	2.50:1.00
3	Atlantic bumper	3	633	314	2.02:1.00
4	Longspine porgy	2	78	3,374	1.00:43.26
5	Inshore lizardfish	2	77	142	1.00: 1.84
6	Scaled sardine	2	69	39	1.77: 1.00
7	Dwarf sand perch	2	44	46	1.00: 1.04
8	Atlantic croaker	1	933	1,817	1.00: 1.95
9	Atlantic cutlassfish	1	186	1,121	1.00: 6.03
10	Lesser blue crab	1	48	327	1.00:6.81
11	White shrimp	1	91	106	1.00: 1.16
12	Silver seatrout	1	97	37	2.62: 1.00
13	Brown shrimp	1	46	52	1.00: 1.13
14	Rough scad	1	34	6	1.00: 5.67
15	Fringed flounder	1	4	31	1.00: 7.75
16	Shoal flounder	1	4	17	1.00: 4.25
17	Brown rock shrimp	1	5	5	1.00: 1.00
18	Shrimp ( <i>Trachypenaeus</i> sp.)	1	5	3	1.67: 1.00
Sum		28	4,661	8,623	1.00: 1.85
Longspine porgy deleted			4,583	5,249	1.00: 1.14

- 1) Unable to achieve significantly fitting full model ( $n=17$ ,  $p=0.2592$ ).
- 2) Deleting suspected outliers didn't result in significantly fitting full model.
- 3) Fit simple linear model to all data across species ( $n=28$ ); sig. fit ( $p=0.0002$ ), y-intercept sd from 0 ( $p=0.0322$ ) and slope sd from 1 ( $p=0.0050$ ). However, two data pairs appeared to heavily influence results (both observations were longspine porgy).
- 4) Deleting two pairs resulted in sig. fitting model ( $p=0.0001$ ), y-intercept nsd from 0 ( $p=0.2062$ ), and slope nsd from 1 ( $p=0.1306$ ).



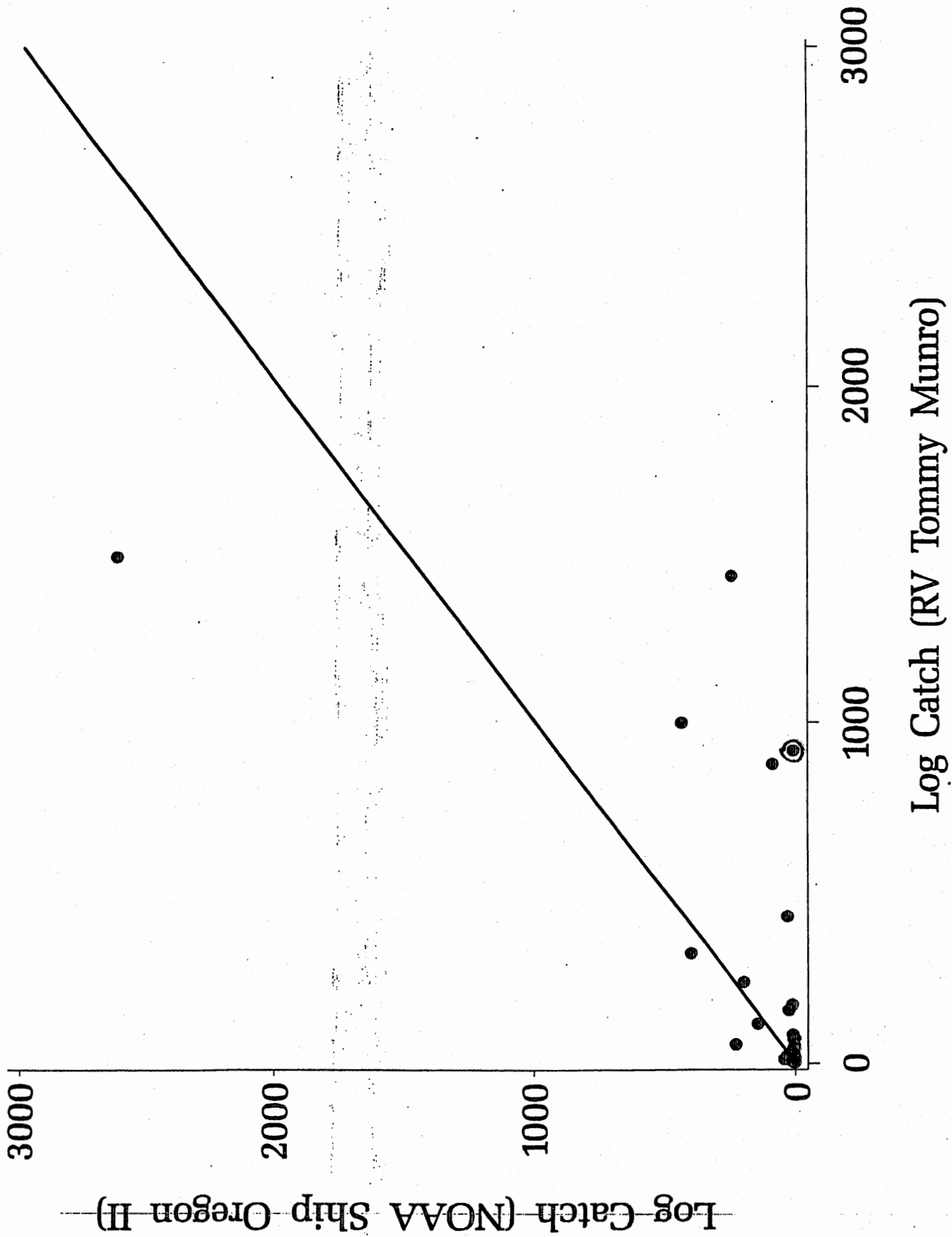
Log Catch (RV Tommy Munro)

Log Catch (NOAA Ship Oregon II)

Numbers caught and ratios (set to unity) of 20 species caught by NOAA Ship Oregon II and RV Tommy Munro during paired comparison tows (October, 1987; 4 tows, 33 observations).

	Name	Capture Frequency	Numbers Caught		Ratio of Respective Vessels
			NOAA Ship Oregon II	RV Tommy Munro	
1	Striped anchovy	3	476	2,426	1.00:5.10
2	Atlantic bumper	3	477	1,939	4.06:1.00
3	Scaled sardine	3	219	431	1.00:1.97
4	Iridescent swimming crab	3	13	104	1.00:8.00
5	Spot	2	418	351	1.19:1.00
6	Lesser blue crab	2	15	72	1.00:14.40
7	Atlantic croaker	2	2,631	1,509	1.74:1.00
8	White shrimp	2	18	29	1.00:1.61
9	Gulf butterfish	2	12	97	1.00:8.08
10	Dwarf sand perch	1	30	426	1.00:14.20
11	Sand seatrout	1	228	54	4.22:1.00
12	Longfin squid	1	26	154	1.00:5.92
13	Longspine porgy	1	7	69	1.00:9.86
14	Inshore lizardfish	1	2	71	1.00:35.50
15	Pancake batfish	1	42	12	3.50:1.00
16	Brown shrimp	1	6	24	1.00:4.00
17	Silver jenny	1	12	6	2.00:1.00
18	Spotted whiff	1	8	5	1.60:1.00
19	Hardhead catfish	1	3	2	1.50:1.00
20	Spanish mackerel	1	2	2	1.00:1.00
Sum		33	4,634	7,783	1.00:1.68
One observation deleted			4,626	6,867	1.00:1.48

- 1) Unable to achieve significantly fitting full model (n=22, p=0.3490).
- 2) Deleting suspected outliers didn't result in significantly fitting full model.
- 3) Fit simple linear model to all data across species (n=33); sig. fit (p=0.0001), y-intercept nsd from 0 (p=0.9665), and slope sd from 1 (p=0.0383). However, one observation appeared to heavily influence results (Atlantic bumper).
- 4) Deleting one observation resulted in significantly fitting model (p=0.0001), y-intercept nsd from 0 (p=0.7368), and slope nsd from 1 (p=0.1173).





Numbers caught and ratios (set to unity) of 19 species caught by NOAA Ship Oregon II and RV Tommy Munro during paired comparison tows (October, 1990; 4 tows, 59 observations).

	Name	Capture Frequency	Numbers Caught		Ratio of Respective Vessels
			NOAA Ship Oregon II	RV Tommy Munro	
1	Scaled sardine	4	1,578	2,041	1.00:1.29
2	Striped anchovy	4	1,658	363	4.57:1.00
3	Lesser blue crab	4	430	881	1.00:2.05
4	Iridescent swimming crab	4	464	457	1.01:1.00
5	White shrimp	4	286	435	1.00:1.52
6	Brown shrimp	4	268	299	1.00:1.12
7	Pigfish	4	118	155	1.00:1.31
8	Atlantic croaker	3	2,820	5,532	1.00:1.96
9	Sand dollar	3	378	678	1.00:1.79
10	Blotched swimming crab	3	72	258	1.00:3.58
11	Least puffer	3	104	35	2.97:1.00
12	Brown rock shrimp	3	28	106	1.00:3.79
13	Sand seatrout	3	66	63	1.05:1.00
14	Flounder (Syacium sp.)	3	24	60	1.00:2.50
15	Fringed flounder	2	266	268	1.00:1.01
16	Atlantic brief squid	2	198	156	1.27:1.00
17	Mexican sea robin	2	60	60	1.00:1.00
18	Atlantic threadfin	2	54	60	1.00:1.11
19	Blackcheek tongue fish	2	12	18	1.00:1.50
Sum		59	8,902	11,937	1.00:1.34

1) Significantly fitting full model ( $p=0.0050$ )

2) All lines were coincident, y-int nsd from 0 and slope nsd from 1

Numbers caught and ratios (set to unity) of 24 species caught by NOAA Ship Oregon II and RV Tommy Munro during paired comparison tows (October 1996; 60 tows, 663 observations).

	Name	Capture Frequency	Numbers Caught		Ratio of Respective Vessels
			NOAA Ship Oregon II	RV Tommy Munro	
1	Atlantic croaker	50	40,572	40,000	1.01:1.00
2	Bigeye searobin	45	15,836	8,572	1.84:1.00
3	Atlantic bumper	44	104,872	112,388	1.00:1.07
4	Brown shrimp	41	2,684	2,404	1.11:1.00
5	Spot	39	26,920	31,740	1.00:1.17
6	Iridescent swimming crab	38	4,576	2,984	1.53:1.00
7	Gulf butterfish	34	4,180	4,488	1.00:1.07
8	Lesser blue crab	32	4,748	2,328	2.03:1.00
9	Inshore lizardfish	30	1,100	840	1.30:1.00
10	Longspine porgy	27	23,020	17,448	1.31:1.00
11	Striped anchovy	25	3,596	6,996	1.00:1.94
12	Pink shrimp	25	896	1,128	1.00:1.02
13	White shrimp	25	848	872	1.00:1.25
14	Mantis shrimp	24	1,692	1,228	1.37:1.00
15	Harvestfish	23	1,608	1,572	1.02:1.00
16	Least puffer	21	1,432	716	1.22:1.00
17	Red snapper	20	544	492	1.10:1.00
18	Fringed flounder	20	392	320	1.22:1.00
19	Rock sea bass	19	644	508	1.26:1.00
20	Scaled sardine	18	2,680	2,448	1.09:1.00
21	Pinfish	17	1,716	1,504	1.14:1.00
22	Brown rock shrimp	17	1,068	908	1.17:1.00
23	Roughback shrimp	15	1,424	488	1.83:1.00
24	Dwarf sand perch	14	2,304	1,576	1.46:1.00
Sum		663	249,352	243,948	1.02:1.00

- 1) Significantly fitting full model
- 2) Reject  $H_0$ .
- 3) All regression coefficients nsd from 0.

Numbers caught and ratios (set to unity) of 14 species caught by NOAA Ship Oregon II and RV Tommy Munro during paired comparison towing [1996 (60 tows) and 1990 (4 tows), n=344].

	Name	Capture Frequency	Numbers Caught		Ratio of Respective Vessels
			NOAA Ship Oregon II	RV Tommy Munro	
1	Atlantic croaker	53	43,392	45,532	1.00:1.05
2	Brown shrimp	45	2,952	2,703	1.09:1.00
3	Iridescent swimming crab	42	5,040	3,441	1.46:1.00
4	Lesser blue crab	36	5,178	3,209	1.61:1.00
5	Inshore lizardfish	32	1,118	852	1.31:1.00
6	Striped anchovy	29	5,254	7,359	1.00:1.40
7	White shrimp	29	1,182	1,563	1.00:1.32
8	Least puffer	24	1,536	751	2.04:1.00
9	Scaled sardine	22	4,258	4,489	1.05:1.00
10	Fringed flounder	22	658	588	1.12:1.00
11	Brown rock shrimp	20	1,096	1,014	1.08:1.00
12	Sand seatrout	16	418	683	1.00:1.63
13	Atlantic brief squid	9	410	476	1.00:1.16
14	Blotched swimming crab	6	100	274	1.00:2.74
Sum		385	72,592	72,935	1.00:1.00
Observations deleted		344	71,064	71,607	1.00:1.01

1) Full model was not of full rank. Species providing redundant information were inshore lizardfish and Atlantic brief squid.

2) Achieved a significantly fitting full model upon deleting these species.

3) Rejected  $H_0$

4) No single species resulted in significant difference between vessels

5) Y-intercept nsd from zero

6) Slope nsd from one

Numbers caught and ratios (set to unity) of six species caught by NOAA Ship Oregon II and RV Tommy Munro during paired comparison towing [1996 (60 tows), 1990 (4 tows), and fall 1987 (4 tows), n=226].

	Name	Capture Frequency	Numbers Caught		Ratio of Respective Vessels
			NOAA Ship Oregon II	RV Tommy Munro	
1	Scaled sardine	55	46,023	47,041	1.00:1.02
2	Striped anchovy	45	5,053	3,546	1.42:1.00
3	Iridescent swimming crab	38	5,183	3,281	1.58:1.00
4	Atlantic croaker	32	5,730	9,785	1.00:1.71
5	White shrimp	31	1,200	1,593	1.00:1.33
6	Lesser blue crab	25	4,470	4,920	1.00:1.10
Sum		226	67,666	70,166	1.00:1.04

- 1) Significantly fitting full model
- 2) Rejected  $H_0$
- 3) Lines were coincident
- 4) Slope nsd from 1
- 5) Y-intercept nsd from 0
- 6) Considering above results, model was refitted restricting slope=1 (same as fitting simple linear model restricting slope=1)
  - a) y-intercept nsd from 0 ( $p=0.1880$ ). Resultant model,  $C_{OII}=(0.90)C_{Munro}$
  - b) note similarity to above ratio,  $C_{OII}=(0.96)C_{Munro}$  [i.e.,  $1/1.04=0.96$ ]

Numbers caught and ratios (set to unity) of two species caught by NOAA Ship Oregon II and RV Tommy Munro during paired comparison tows (1996, 1990, fall and summer 1987, n=62).

	Name	Capture Frequency	Numbers Caught		Ratio of Respective Vessels
			NOAA Ship Oregon II	RV Tommy Munro	
1	Striped anchovy	35	6,653	10,155	1.00:1.53
2	Scaled sardine	27	4,545	4,960	1.00:1.09
Sum		62	11,198	15,114	1.00:1.35

- 1) Significantly fitting full model
- 2) All lines were coincident
- 3) Y-intercept nsd from 0, slope nsd from 1

# **NOAA Ship Oregon II - R/V Pelican**

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## **Four Experiments**

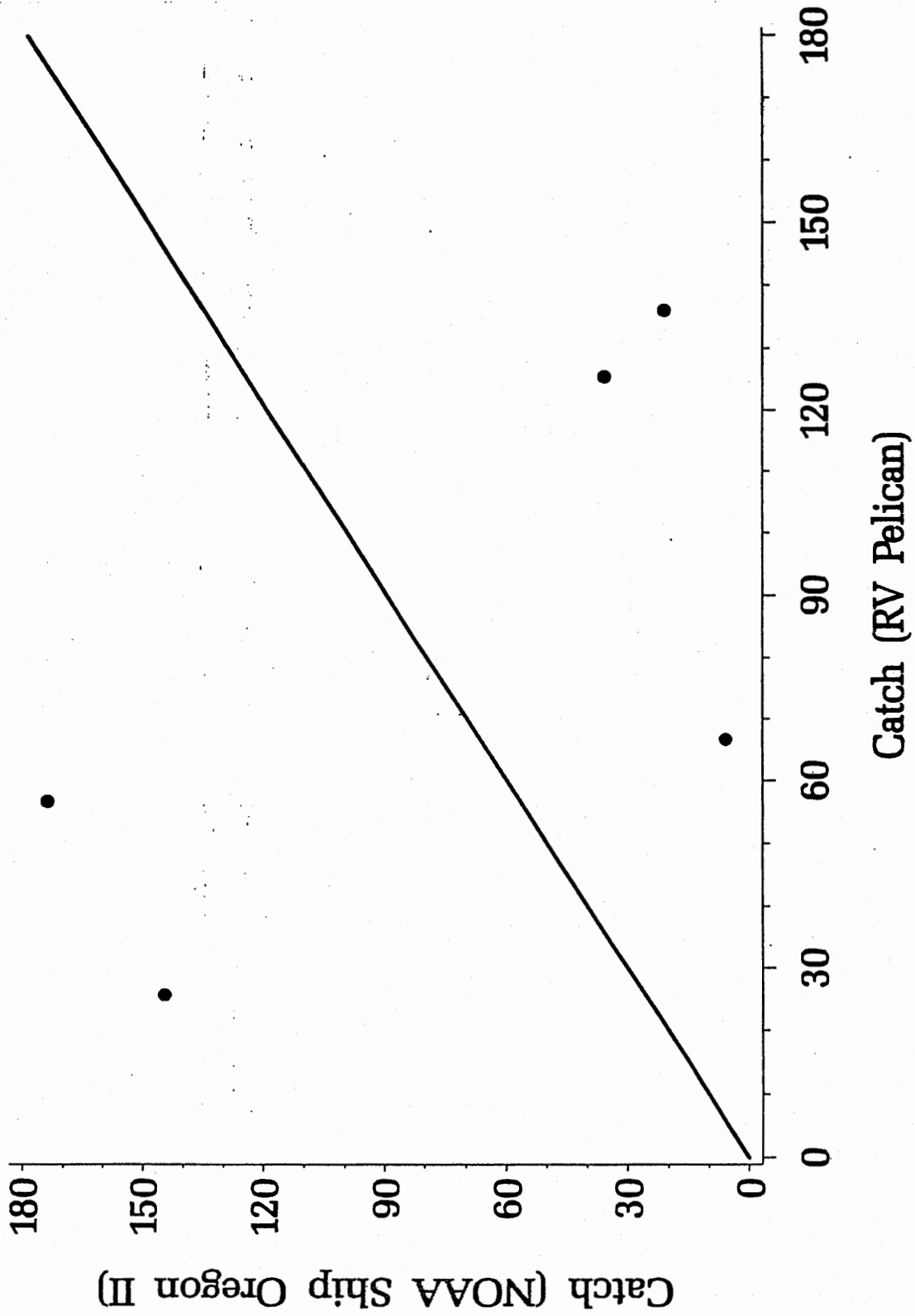
- 1987 (14 paired tows, 122 observations)
- 1989 (10 paired tows, 138 observations)
- 1990 (10 paired tows, 66 observations)
- 1991 ( 9 paired tows, 60 observations)

Capture frequency, numbers caught and ratios (set to unity) of 28 species caught by NOAA Ship Oregon II and RV Pelican during paired comparison towing (Summer 1987, 14 tows, 122 observations).

	Name	Capture Frequency	Numbers Caught		Ratio of Respective Vessels
			NOAA Ship Oregon II	RV Pelican	
1	Lesser blue crab	10	736	7,463	1.00:10.14
2	Brown shrimp	8	591	1,167	1.00:1.97
3	Iridescent swimming crab	8	336	2,374	1.00:7.05
4	Atlantic bumper	7	1,636	2,331	1.00:1.42
5	Longspine porgy	7	307	1,244	1.00:4.04
6	Shrimp (Trachypenaeus sp.)	7	1,226	27,266	1.00:22.23
7	Fringed flounder	6	149	950	1.00:6.35
8	Rock sea bass	5	67	271	1.00:4.03
9	Longfin squid	5	381	410	1.00:1.07
10	Atlantic croaker	5	1,972	2,774	1.00:1.40
11	White shrimp	5	88	105	1.00:1.19
12	Hardhead catfish	4	3,979	2,087	1.90:1.00
13	Silver seatrout	4	139	157	1.00:1.13
14	Spot	4	1,970	2,285	1.00:1.15
15	Atlantic brief squid	4	80	89	1.00:1.10
16	Gulf butterfish	4	160	69	2.31:1.00
17	Spotted whiff	3	33	89	1.00:2.66
18	Pancake batfish	3	25	129	1.00:4.99
19	Least puffer	3	94	485	1.00:5.11
20	Inshore lizardfish	3	71	179	1.00:2.51
21	Atlantic cutlassfish	3	16	35	1.00:2.16
22	Bearded brotula	2	18	69	1.00:3.64
23	Sand seatrout	2	47	31	1.51:1.00
24	Pink shrimp	2	79	52	1.53:1.00
25	Bigeye searobin	2	10	669	1.00:66.50
26	Bighead searobin	2	21	27	1.00:1.31
27	Star drum	2	15	25	1.00:1.57
28	Blackcheek tonguefish	2	9	70	1.00:7.35
Sum		122	14,269	52,913	1.00:3.71

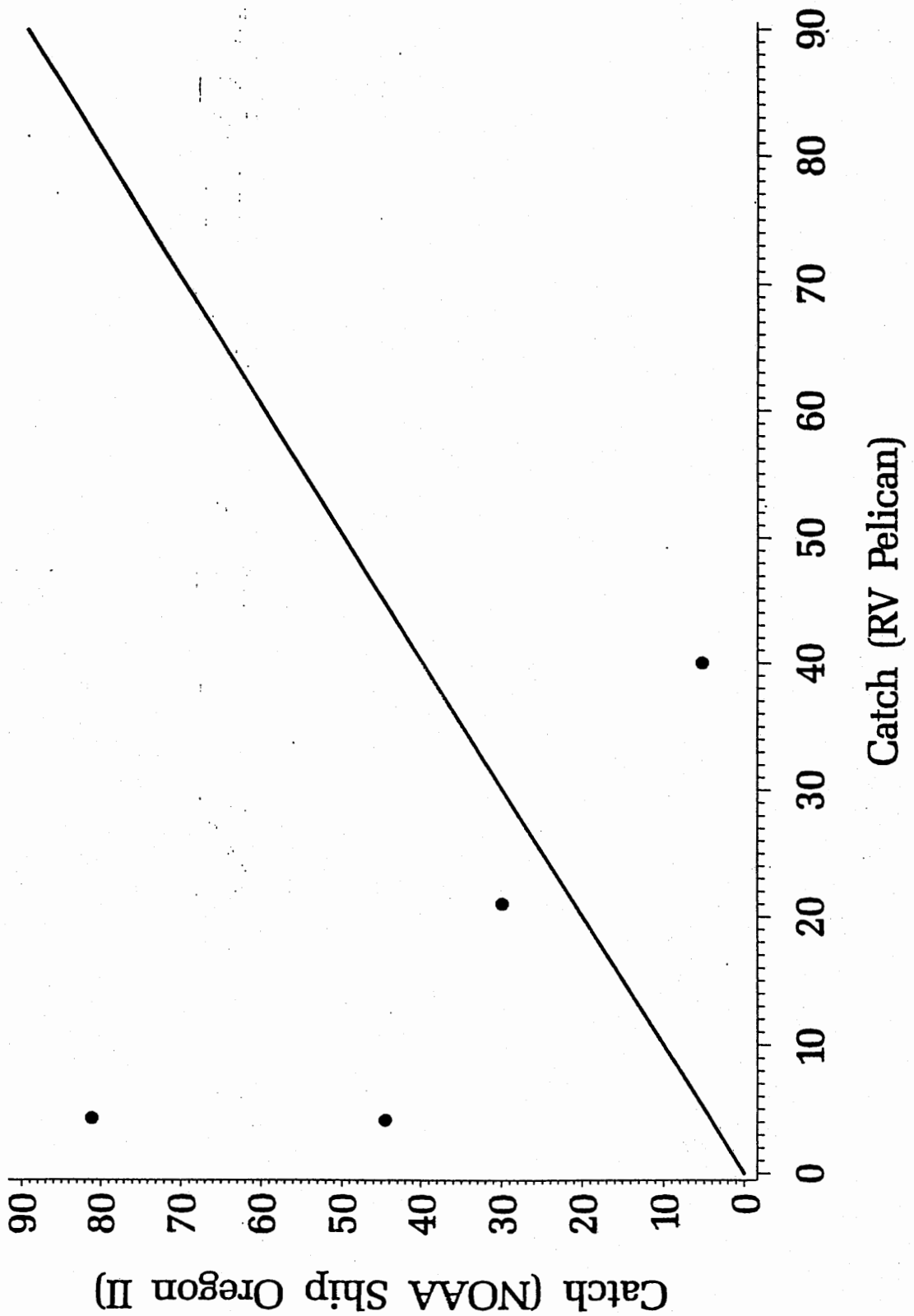
- 1) Significantly fitting full model ( $p=0.0001$ )
- 2) Rejected  $H_0$ .
- 3) Significant differences between vessels were caused by three species; longfin squid, Gulf butterfish and inshore lizardfish.
- 4) Y-intercept nsd from 0 and slope nsd from 1.

# Longfin Squid

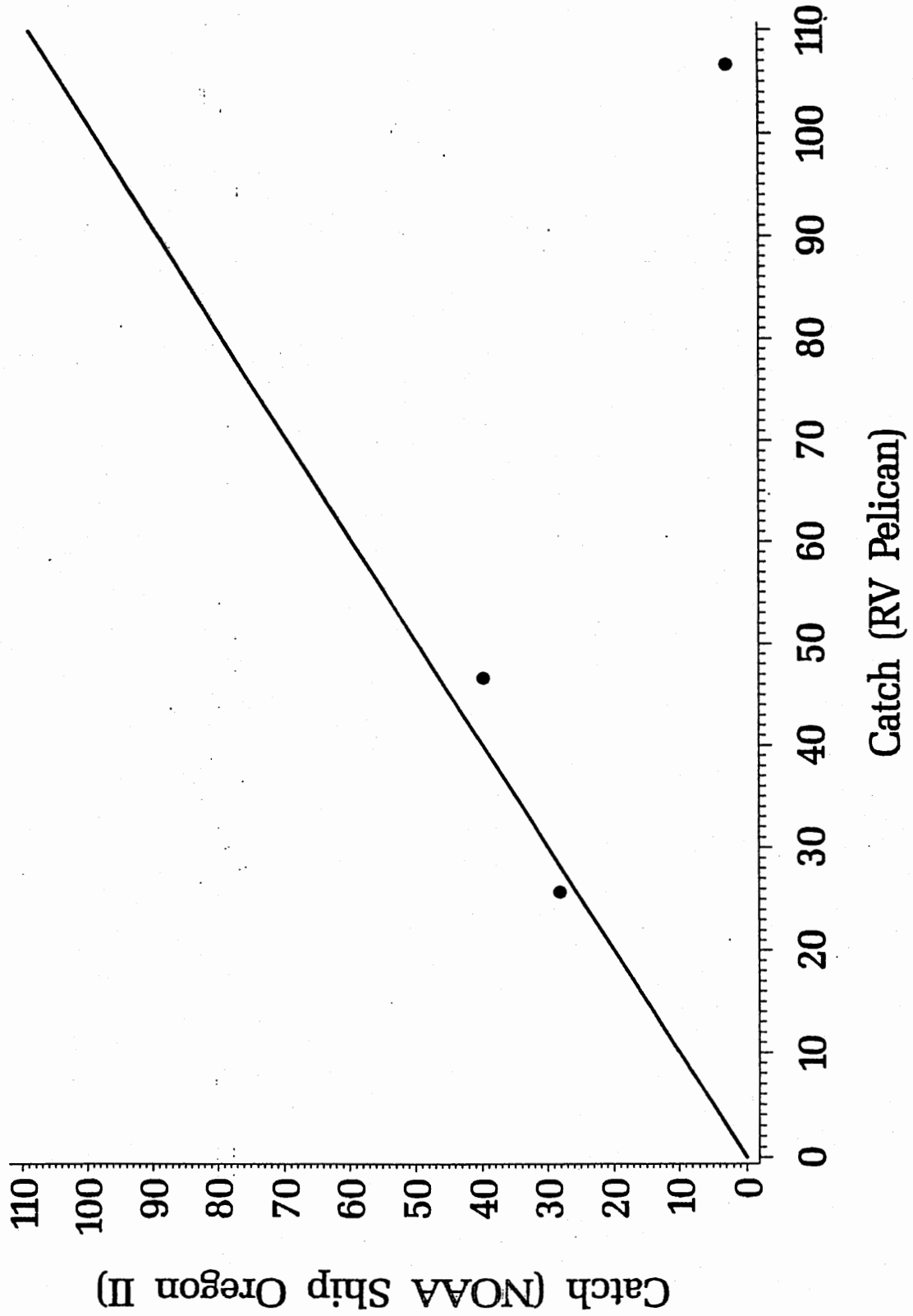




# Gulf Butterfish



# Inshore Lizardfish



Capture frequency, numbers caught and ratios (set to unity) of 30 species caught by NOAA Ship Oregon II and RV Pelican during paired comparison towing (Fall 1989, 10 tows, 138 observations).

	Name	Capture Frequency	Numbers Caught		Ratio of Respective Vessels
			NOAA Ship Oregon-II	RV Pelican	
1	Rock sea bass	10	170	277	1.00:1.62
2	Lesser blue crab	9	252	1,586	1.00:6.28
3	Longfin squid	9	3,420	750	4.55:1.00
4	Brown shrimp	8	1,026	1,050	1.00:1.02
5	Inshore lizardfish	8	188	531	1.00:2.81
6	Dwarf sand perch	7	274	188	1.45:1.00
7	Red snapper	7	197	590	1.00:2.99
8	Atlantic brief squid	6	989	459	2.15:1.00
9	Atlantic croaker	6	556	705	1.00:1.26
10	Iridescent swimming	6	163	278	1.00:1.70
11	Longspine porgy	6	387	421	1.00:1.08
12	Lane snapper	5	75	67	1.00:1.12
13	Bigeye sea robin	5	110	471	1.00:4.26
14	Sand seatrout	4	119	319	1.00:2.68
15	Gulf butterflyfish	4	619	750	1.00:1.21
16	Shoal flounder	4	74	1,181	1.00:15.87
17	Atlantic bumper	3	53	50	1.05:1.00
18	Silver seatrout	3	81	650	1.00:8.02
19	Silver jenny	3	129	110	1.17:1.00
20	Atlantic midshipman	3	13	18	1.00:1.38
21	Blackear sea bass	3	59	392	1.00:6.58
22	Shrimp (Trachypenaeus sp.)	3	443	1,432	1.00:3.22
23	Hardhead catfish	2	10	74	1.00:7.41
24	Gulf menhaden	2	21	16	1.35:1.00
25	Mexican flounder	2	6	26	1.00:4.05
26	Fringed flounder	2	48	109	1.00:2.27
27	Smooth puffer	2	19	50	1.00:2.63
28	Lesser rock shrimp	2	9	39	1.00:4.12
29	Rough scad	2	34	23	1.43:1.00
30	Dwarf goat fish	2	29	98	1.00:3.37
Sum		138	9,585	12,725	1.00:1.33

- 1) Significantly fitting full model ( $p=0.0001$ ).
- 2) Reject  $H_0$ .
- 3) Significant difference not due to single species effect.
- 4) Y-intercept nsd from 0 and slope nsd from 1.

Capture frequency, numbers caught and ratios (set to unity) of 23 species caught by NOAA Ship Oregon II and RV Pelican during paired comparison towing (Summer 1990, 10 tows, 66 observations).

	Name	Capture Frequency	Numbers Caught		Ratio of Respective Vessels
			NOAA Ship Oregon II	RV Pelican	
1	Lesser blue crab	5	363	2,206	1.00:6.07
2	Rock sea bass	4	1,345	7,914	1.00:5.88
3	Sand seatrout	4	351	1,681	1.00:4.78
4	Silver seatrout	4	1,596	735	2.16:1.00
5	Brown shrimp	4	475	868	1.00:1.82
6	Atlantic cutlassfish	4	2,396	3,041	1.00:1.26
7	Blue crab	3	260	123	2.10:1.00
8	Dwarf sand perch	3	561	1,121	1.00:1.99
9	Atlantic brief squid	3	375	631	1.00:1.68
10	Atlantic croaker	3	744	578	1.28:1.00
11	Iridescent swimming crab	3	108	896	1.00:8.26
12	Mantis shrimp	3	3,143	1,877	1.67:1.00
13	Longspine porgy	3	874	4,046	1.00:4.62
14	Ragged goby	2	1,310	699	1.87:1.00
15	Fringed flounder	2	68	472	1.00:6.87
16	Longfin squid	2	31	330	1.00:10.38
17	Red snapper	2	339	49	6.82:1.00
18	White shrimp	2	30	42	1.00:1.40
19	Gulf butterfish	2	83	195	1.00:2.35
20	Atlantic midshipman	2	87	56	1.53:1.00
21	Blackear sea bass	2	654	138	4.72:1.00
22	Blackcheek tonguefish	2	78	146	1.00:1.87
23	Shrimp ( <i>Trachypenaeus</i> sp.)	2	270	1,745	1.00:6.46
Sum		66	15,549	29,600	1.00:1.90
Observations deleted		61	15,087	19,027	1.00:1.26

- 1) Unable to achieve significantly fitting full model ( $p=0.4615$ ).
- 2) Inspection of outliers revealed 5 extreme values (Atlantic cutlassfish, rock sea bass [2], lesser blue crab and longspine porgy ratios exceeded 25:1)
- 3) Deleting these values resulted in a significantly fitting model ( $p=0.0279$ ).
- 4) All lines were coincident with y-intercept nsd from 0 and slope nsd from 1.

Capture frequency, numbers caught and ratios (set to unity) of 22 species caught by NOAA Ship Oregon II and RV Pelican during paired comparison towing (Summer 1991, 9 tows, 67 observations).

	Name	Capture Frequency	Numbers Caught		Ratio of Respective Vessels
			NOAA Ship Oregon II	RV Pelican	
1	Brown shrimp	5	2,023	1,327	1.52:1.00
2	Shrimp ( <i>Trachypenaeus</i> sp.)	5	26,039	25,002	1.04:1.00
3	Bigeye searobin	4	2,326	3,103	1.00:1.33
4	Rock sea bass	4	742	752	1.00:1.01
5	Shoal flounder	4	111	792	1.00:7.12
6	Mantis shrimp	4	9,237	11,342	1.00:1.22
7	Lesser rock shrimp	4	338	997	1.00:2.94
8	Lesser blue crab	4	2,501	11,179	1.00:1.22
9	Iridescent swimming crab	4	2,027	2,028	1.00:1.00
10	Longspine porgy	3	1,439	1,084	1.32:1.00
11	Bearded brotula	3	109	84	1.28:1.00
12	Atlantic brief squid	3	583	1,969	1.00:3.37
13	Dwarf sand perch	2	166	378	1.00:2.27
14	Blackear sea bass	2	373	223	1.67:1.00
15	Sand seatrout	2	122	511	1.00:4.17
16	Atlantic croaker	2	154	184	1.00:1.19
17	Ragged goby	2	129	106	1.22:1.00
18	Blackedge cusk-eel	2	168	69	2.41:1.00
19	Fringed flounder	2	68	84	1.00:1.23
20	Blackcheek tonguefish	2	238	119	1.99:1.00
21	Pancake batfish	2	68	219	3.21:1.00
22	Blotched swimming crab	2	68	75	1.00:1.10
Sum		67	49,037	61,636	1.00:1.26

- 1) Significantly fitting full model ( $p=0.0003$ ).
- 2) All lines were coincident with y-intercept nsd from 0 and slope nsd from 1.

# **NOAA Ship Oregon II - RV A.E. Verrill**

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## **One Experiment**

- **Fall, 1990 (four tows, 12 observations)**

Capture frequency, numbers caught and ratios (set to unity) of eight species caught by NOAA Ship Oregon II and RV A.E. Verrill during paired comparison towing (Fall 1990, 4 tows, 12 observations).

	Name	Capture Frequency	Numbers Caught		Ratio of Respective Vessels
			NOAA Ship Oregon II	RV Pelican	
1	Striped anchovy	3	476	90	5.29:1.00
2	Atlantic bumper	2	447	213	2.10:1.00
3	Gulf butterfish	2	12	28	1.00:2.33
4	Rough scad	1	358	26	13.77:1.00
5	Longfin squid	1	26	72	1.00:2.77
6	Scaled sardine	1	9	5	1.00:1.80
7	Longspine porgy	1	7	2	3.50:1.00
8	Hardhead catfish	1	3	3	1.00:1.00
Sum		12	1,337	440	3.04:1.00

- 1) Unable to achieve significantly fitting full model ( $p=0.2162$ )
- 2) Wasn't able to inspect outliers because of one error degree of freedom
- 3) Performed SLR on available species.
- 4) Significantly fitting model ( $p=0.0228$ )
- 5) Y-intercept nsd from 0 and slope nsd from 1.

# **RVs Tommy Munro - A.E. Verrill**

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## **Three Experiments**

- **Fall 1987 (four tows, 14 observations)**
- **Summer 1990 (four tows, 18 observations)**
- **Summer 1993 (22 tows, 128 observations)**



Capture frequency, numbers caught and ratios (set to unity) of 8 species caught by RVs *Tommy Munro* and *A.E. Verrill* during paired comparison towing (Fall 1987, 4 tows, 14 observations).

	Name	Capture Frequency	Numbers Caught		Ratio of Respective Vessels
			RV Tommy Munro	RV A.E. Verrill	
1	Gulf butterfish	4	234	76	3.08:1.00
2	Atlantic bumper	3	1,971	273	7.22:1.00
3	Atlantic brief squid	2	639	103	6.20:1.00
4	Longspine porgy	1	69	2	34.50:1.00
5	Lesser blue crab	1	55	12	4.58:1.00
6	Scaled sardine	1	28	5	5.60:1.00
7	Hardhead catfish	1	2	3	1.50:1.00
8	Pancake batfish	1	2	3	1.50:1.00
Sum		14	2,999	479	6.26:1.00

- 1) Unable to achieve a significantly fitting full model ( $p=0.4971$ )
- 2) Could delete only two outliers because of limited error degrees of freedom
- 3) Performed SLR on available species
- 4) Significantly fitting model
- 5) Y-intercept nsd from 0 and slope nsd from 1

Capture frequency, numbers caught and ratios (set to unity) of 14 species caught by RVs *Tommy Munro* and *A.E. Verrill* during paired comparison towing (Summer 1990, 4 tows, 18 observations).

	Name	Capture Frequency	Numbers Caught		Ratio of Respective Vessels
			RV Tommy Munro	RV A.E. Verrill	
1	Atlantic croaker	2	3,546	818	4.33:1.00
2	Lesser blue crab	2	246	186	1.32:1.00
3	Iridescent swimming crab	2	276	148	1.86:1.00
4	White shrimp	2	198	48	4.13:1.00
5	Sand dollar	1	192	450	1.00:2.34
6	Fringed flounder	1	42	92	1.00:2.19
7	Atlantic brief squid	1	78	12	6.50:1.00
8	Brown rock shrimp	1	42	12	3.50:1.00
9	Flounder ( <i>Syacium</i> sp.)	1	30	12	2.50:1.00
10	Brown shrimp	1	18	20	1.00:1.11
11	Atlantic threadfin	1	12	12	1.00:1.00
12	Sand seatrout	1	12	12	1.00:1.00
13	Pigfish	1	6	8	1.00:1.33
14	Bighead searobin	1	6	6	1.00:1.00
Sum		18	4,704	1,836	2.56:1.00

- 1) Too few observations to fit full model
- 2) Performed SLR on available data
- 3) Significantly fitting model ( $p=0.0009$ )
- 4) Y-intercept nsd from 0 and slope nsd from 1

Capture frequency, numbers caught and ratios (set to unity) of 13 species caught by RVs *Tommy Munro* and *A.E. Verrill* during paired comparison towing (Summer 1993, 22 tows, 128 observations).

	Name	Capture Frequency	Numbers Caught		Ratio of Respective Vessels
			RV Tommy Munro	RV A.E. Verrill	
1	Netted sea star	14	1,120	909	1.23:1.00
2	Dwarf sand perch	13	1,048	401	2.61:1.00
3	Fringed flounder	13	748	327	2.29:1.00
4	Longspine porgy	12	22,596	14,160	1.60:1.00
5	Squid ( <i>Loligo</i> sp.)	12	11,704	6,734	1.74:1.00
6	Red snapper	11	1,240	979	1.27:1.00
7	Lesser blue crab	11	1,008	369	2.73:1.00
8	Gulf butterfish	8	1,904	4,356	1.00:2.29
9	Blue crab	8	72	75	1.00:1.04
10	Scaled sardine	7	716	1,284	1.00:1.79
11	Harvestfish	7	240	371	1.00:1.55
12	Atlantic croaker	6	7,744	3,132	2.47:1.00
13	Atlantic bumper	6	908	2,204	1.00:2.43
Sum		128	51,048	35,300	1.45:1.00

1) Significantly fitting full model ( $p=0.0001$ )

2) Reject  $H_0$

3) Two species resulted in significant differences between vessels; fringed flounder and harvestfish (y-intercepts nsd from 0 but slopes sd from 1).

4) All other lines were coincident with y-intercept nsd from 0 and slope nsd from 1

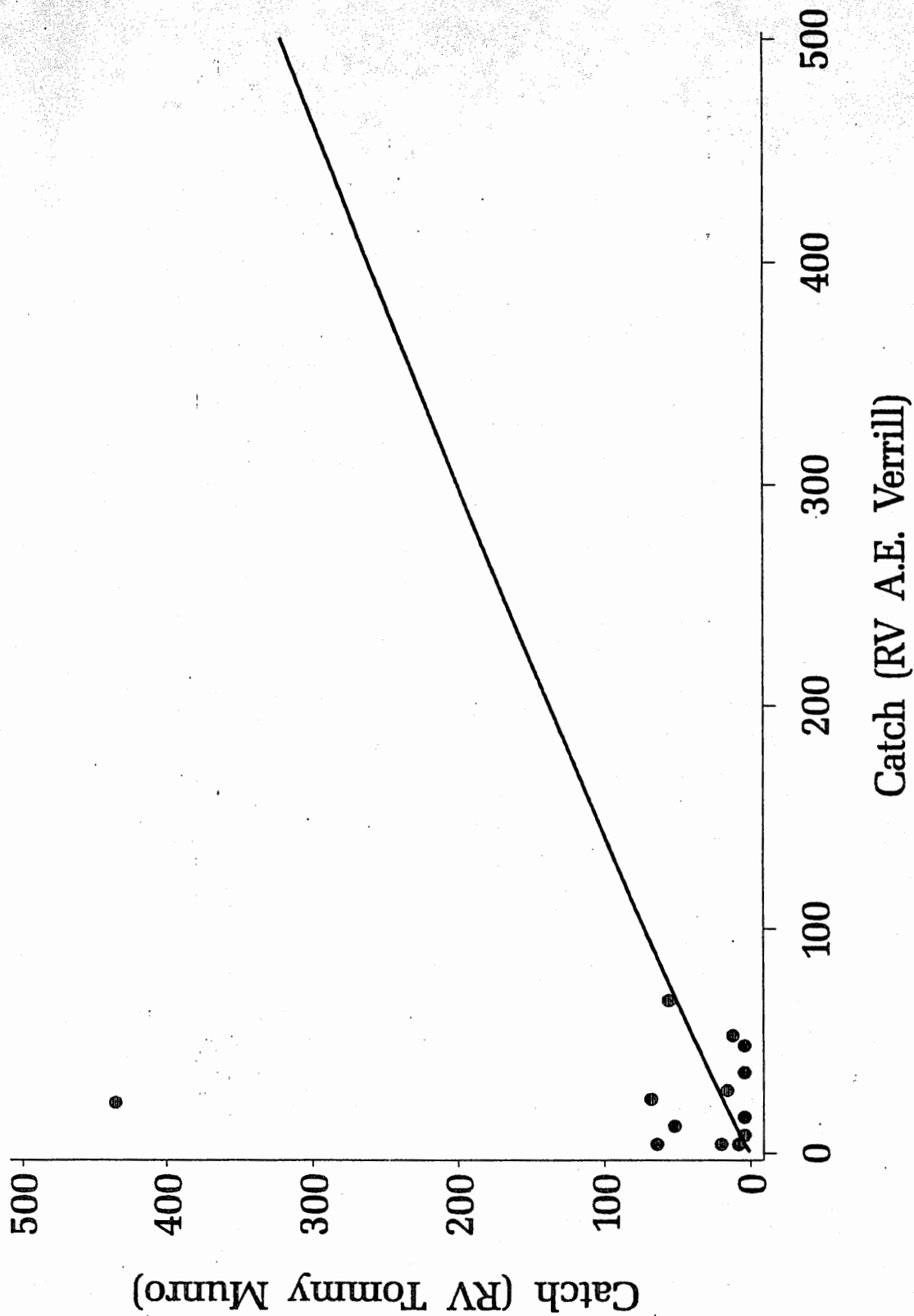
5) Refitted equations were;

$$C_{\text{Munro}} = (C_{\text{Verrill}})^{0.930} \quad \text{[fringed flounder]}$$

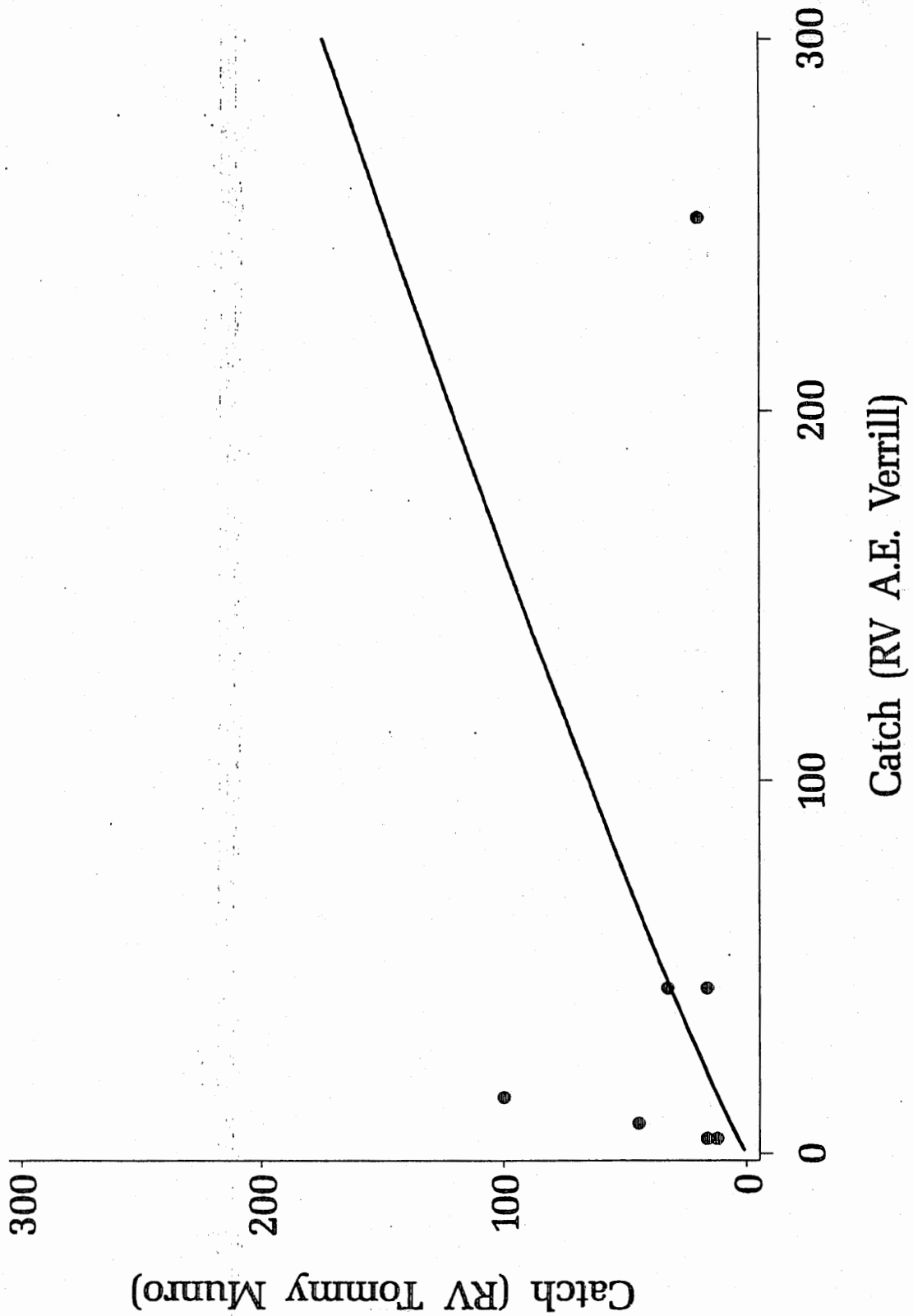
$$C_{\text{Munro}} = (C_{\text{Verrill}})^{0.907} \quad \text{[harvestfish]}$$

both refitted lines resulted in slopes nsd from 1.

# Fringed Flounder



# Harvestfish



# **RVs Tommy Munro - Pelican**

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## **One Experiment**

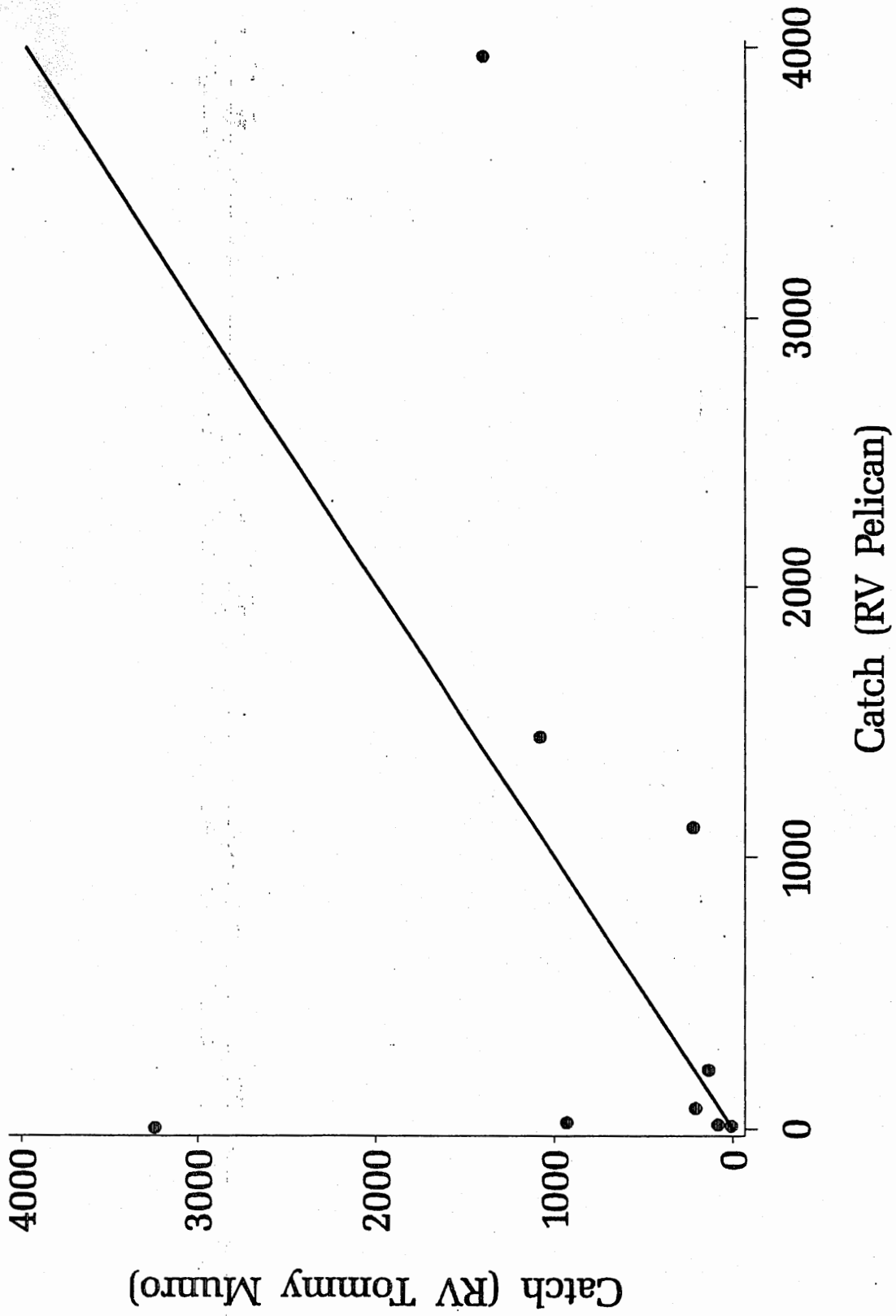
- Summer 1994 (49 tows, 811 observations)

Capture frequency, numbers caught and ratios (set to unity) of 37 species caught by RVs Tommy Munro and Pelican during paired comparison towing (Summer 1994, 49 tows, 811 observations).

	Name	Capture Frequency	Numbers Caught		Ratio of Respective Vessels
			RV Tommy Munro	RV Pelican	
1	Flounders (Syacium sp.)	44	10,968	11,031	1.00:1.01
2	Bigeye searobin	43	12,040	23,811	1.00:1.98
3	Atlantic brief squid	42	13,900	15,809	1.00:1.14
4	Common mantis shrimp	39	22,324	21,524	1.04:1.00
5	Silver seatrout	39	7,888	6,167	1.28:1.00
6	Roughback shrimp	37	117,768	94,344	1.25:1.00
7	Sand seatrout	35	6,996	5,315	1.32:1.00
8	Brown shrimp	35	1,172	965	1.21:1.00
9	Lesser blue crab	27	5,268	3,392	1.55:1.00
10	Fringed flounder	27	1,108	1,372	1.00:1.24
11	Lesser rock shrimp	25	10,852	11,186	1.00:1.03
12	Gulf butterflyfish	25	8,036	2,176	3.69:1.00
13	Atlantic cutlassfish	24	14,464	6,499	2.23:1.00
14	Rock sea bass	24	2,200	3,201	1.00:1.45
15	Southern hake	23	1,188	2,500	1.00:2.10
16	Striped anchovy	22	4,316	10,845	1.00:2.51
17	Ragged goby	21	3,640	5,828	1.00:1.60
18	Dward sand perch	21	3,508	1,952	1.80:1.00
19	Iridescent swimming crab	20	4,932	2,808	1.76:1.00
20	Pancake batfish	20	1,676	1,453	1.15:1.00
21	Least puffer	19	804	1,304	1.00:1.62
22	Inshore lizardfish	19	456	436	1.05:1.00
23	Atlantic croaker	18	29,320	19,717	1.49:1.00
24	Bay anchovy	17	2,204	10,759	1.00:4.88
25	Mantis shrimp	17	2,872	2,440	1.18:1.00
26	Blackedge cusk-eel	16	1,032	1,412	1.00:1.37
27	Wenchman	14	684	360	1.90:1.00
28	Pink shrimp	13	440	960	1.00:2.18
29	Bearded brotula	13	564	716	1.00:1.27
30	Rough scad	12	284	701	1.00:2.47
31	Luminous hake	9	7,308	6,868	1.06:1.00
32	Blackear sea bass	9	992	1,328	1.00:1.34
33	Single-spot frogfish	9	212	112	1.89:1.00
34	Blue crab	9	156	104	1.50:1.00
35	Long-spine swimming crab	8	876	720	1.22:1.00
36	Bay whiff	8	208	196	1.06:1.00
37	Atlantic midshipman	8	80	48	1.67:1.00
Sum		794	297,084	275,911	1.08:1.00
Observations deleted		792	292,912	275,883	1.06:1.00

- 1) Significantly fitting full model ( $p=0.0001$ )
- 2) One species, luminous hake, resulted in significant difference between vessels
- 3) All other lines were coincident with y-intercept nsd from 0 and slope nsd from 1
- 4) Two luminous hake observations appeared to heavily influence fitted line
- 5) Omitting two observations resulted in significantly fitting line ( $p=0.0101$ ), y-intercept nsd from 0 and slope nsd from 1

# Luminous Hake





# Paired Comparison Towing

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## Summary

- NOAA Ship Oregon II - RV Tommy Munro
  - Summer 1987- nsd after deleting two observations and fitting SLR
  - Fall 1987- nsd after deleting one observation and fitting SLR
  - Fall 1990 - nsd between vessels
  - Fall 1996 - sd between vessels but not due to single species effect
- NOAA Ship Oregon II - RV Pelican
  - Summer 1987 - sd between vessels for 3 of 28 species (3 showed variable results)
  - Fall 1989 - sd between vessels but not due to single species effect
  - Summer 1990 - nsd after deleting 5 of 66 observations
  - Summer 1991 - nsd between vessels

# Paired Comparison Towing

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## Summary

- NOAA Ship Oregon II - RV A.E. Verrill
  - Fall 1990 - nsd after performing SLR
- RVs Tommy Munro - A.E. Verrill
  - Fall 1987 - nsd after performing SLR
  - Summer 1990 - nsd after performing SLR
  - Summer 1993 - sd between vessels for 2 of 13 species  $C_{\text{Munro}} = (C_{\text{Verrill}})^{0.9xx}$
- RVs Tommy Munro - Pelican
  - Summer 1994 - nsd between vessels after deleting 2 observations

Harriet Perry

## **TCC CRAB SUBCOMMITTEE**

### **MINUTES**

**Wednesday, March 16, 1999**

**New Orleans, Louisiana**

Chair Harriet Perry called the meeting to order at 8:41 a.m. Several complaints were made regarding the absence of members from Texas, Mississippi, and Alabama. The following members and others were present:

#### **Members**

Harriet Perry, *Chairman*, USM/IMS/GCRL, Ocean Springs, MS

Vince Guillory, LDWF, Bourg, LA

Steve Heath, ADCNR/MRD, Dauphin Island, AL (*Proxy for L. Hartman*)

Phil Steele, FDEP, St. Petersburg, FL

#### **Staff**

Steve VanderKooy, IJF Program Coordinator, Ocean Springs, MS

Cindy Yocom, Staff Assistant, Ocean Springs, MS

#### **Others**

Mark Schexnayder, LDWF, Baton Rouge, LA

Bob Palmer, FMFC, Tallahassee, FL

Dale Shively, TPWD, Austin, TX

Butch Pellegrin, NMFS, Pascagoula, MS

#### **Adoption of Agenda**

**The agenda was adopted by consensus.**

#### **Adoption of Minutes**

Due to a clerical error, adoption of the minutes was dispensed with until the next meeting.

#### **State Reports**

**Florida** - P. Steele reported landings in 1998 are up to 17 million pounds. Soft crab production is up slightly. Legislatively, two or three options have been added to the escape ring rule. P. Steele distributed a paper discussing the resource potential of land crabs (*Cardisoma guanhumi*). Land crabs are sold in Miami at .50 each and are \$25-\$30 per dozen in Puerto Rico.

P. Steele introduced Bob Palmer, economist for the FDEP, who is here to speak briefly on Florida's blue crab fishery license moratorium and workshops. B. Palmer explained that the problem associated with the blue crab fishery are similar to those in other trap fisheries. The number of

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participants has increased and the number of traps each person deploys has increased while catches are relatively stable. From a business standpoint, costs are increasing so these businesses are less profitable. One result of a limited entry program would be to increase the average profitability of the industry over time. There is no organization of blue crabbers which would easily allow dissemination of information; however, workshops may be useful tools to educate fishermen. Individuals could discuss legislation, a fishery scientist could present general information about the fishery, and a panel discussion could be held by other blue crab fishermen or dealers who have been affected a limited entry moratorium. This would be followed by questions and answers.

B. Palmer asked if the Commission could be a good vehicle for a series of workshops. R. Lukens stated that the Commission is able to facilitate these type activities; however, no money was budgeted for special programs in 1999.

H. Perry suggested that general session would be an appropriate forum for this topic. This would be a good precursor to individual state workshops. A half day general session (presentations, etc.) could be held with an ensuing work session to answer questions. **P. Steele made a motion to recommend to the TCC that a General Session on Limited Entry be held in October 2000 with a work session to follow. The budget should not exceed \$5,000. V. Guillory seconded the motion which passed.**

Alabama - H. Perry noted that Ken Heck, John Valentine, and Patricia Spitzer will be presenting at the mortality symposium. They will cover mortality on post-settlement, settlement, and at settlement sites.

S. Heath reported that landings in Alabama are up slightly from 1997 at more than three million pounds. Price is also up from 1997. More than 190 licenses were sold both years. More than 170 of which were resident licenses each year. Landings have been stable at three million pounds for the past three years.

Mississippi - H. Perry presented a summation of settlement data from 1991 through 1998. It appears that 1991 was an aberrant year. Settlement in 1996 was extremely low. Looking at the data, from megalopae to first crabs a lot of molting occurs. They are also suction sampling off collection areas in an attempt to get an idea of natural mortality. Nonvegetated soft sediment habitats are very important and shelf circulation may indeed affect settlement.

Texas - Although Texas did not send an official proxy, Dale Shively was in attendance and noted that Texas is continuing with limited entry. License plates for crab fishermen are being issued to go on their boat.

Louisiana - V. Guillory reported that 1998 landings' data are not available yet. The license moratorium has expired. This year is open to anyone who wants to purchase a license. They will not know until the end of the year how this has impacted the number of license sales.

In January, the trip ticket system was started. Each time seafood is sold it will be reported on an individual trip ticket which has a multitude of data including gear type, location, etc. Hopefully the



fishery-dependent data will be more accurate. Catch data will be reported for the first time. There are a few problems; soft crab production data may suffer. Peeler crabs will be ticketed, but when the shedder sells the soft crabs there will be no ticket.

Fishery legislation will be submitted during the general session this year. One piece of legislation proposes a recreational limit on crab catch at 12 dozen. Another would make dealers/processors liable for undersize crab violations. The problem with undersized crabs is not nearly as severe as in the past due to escape rings, higher penalties, etc. The dealer/processor liability will also help. Another bill being introduced by a commercial fishery group will attempt to define serviceable and unserviceable traps. In the past, shrimpers have been fined for having crab traps that have been picked up in their trawls. This bill would allow trawlers to be able to bring in "unserviceable" traps. Crabbers would also be required to bring in "unserviceable" traps. This will be very difficult to enforce. Originally, the crabbers were opposed to any measure to allow shrimpers to bring in traps; however, they realized that shrimpers probably did not intentionally go out just to pick crab traps out of the water.

### **Blue Crab Mortality Symposium**

V. Guillory reported that progress on the symposium looks good. Approximately 15-16 papers will be presented at the oral session. One paper will be presented at the poster session. There will be three invited speakers. Ken Heck will speak on post-settlement mortality of juvenile blue crabs in nursery habitat. Marious Brouwer will speak on the effects of environmental toxicants on the blue crab, *Callinectes sapidus*. Bill Stickler will present on the effects of environmental factor gradients on juvenile *Callinectes sapidus*.

He will send a memo out next week providing additional information on formats and deadlines. Tentative plans are to have the written reports by July 1. A review committee (Truesdale & Feldman) will be set up, and papers will be reviewed. The format from *Journal of Shellfish Reports* will be used. Proceedings should be published this year.

### **Chaceon Profile**

H. Perry reported that this group was asked by the GMFMC to assist in the development of the profile once the blue crab FMP is completed. She will represent the Commission, and the Council will appoint their representative. The Subcommittee has recommended that the Council manage this fishery two years in a row. Once a profile is in place perhaps they will begin to address regulating the fishery.

P. Steele reported that landings in 1998 were down to 383,414 pounds with value of \$348,000. There was a total of 133 trips, 75 trips on east coast and 58 trips on west coast. Landings in 1997 were more than 1,332,000 pounds. There are nine dealers which are down from 13 the year before.

### **Other Business**

The blue crab FMP will be presented to the Technical Coordinating Committee. The Subcommittee





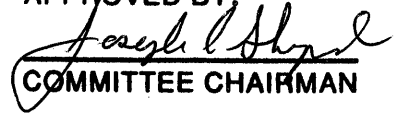
fine tuned their presentation. S. VanderKooy presented comments from the Commercial-Recreational Fisheries Advisory Panel. Several members asked why the document was released to them and subsequently others for review. S. VanderKooy explained that this group is not in the current approval process and felt their comments would be valuable at this time. Unfortunately, a panel member sent the document to a Sea Grant agent for review. Usually those type comments would be received and acted upon through the public review process later in the approval process. D. Shively relayed that P. Hammerschmidt had several comments. There were no problems with the management recommendations. He did ask why weren't z values for bag seine data included. B. Pellegrin explained to make data comparable across states, data from similar gears were used. Comments will be collected and given to V. Guillory and H. Perry who are the main editors of the document. The document may not be voted on until after the meeting.

**There being no further business, the meeting adjourned at 11:59 a.m.**

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COMMITTEE CHAIRMAN**DATA MANAGEMENT SUBCOMMITTEE  
MINUTES****Tuesday, March 16, 1999  
New Orleans, Louisiana**

Vice-Chairman Joe Shepard called the meeting to order at 8:35 a.m. The following members and others were present:

**Members**

Rick Leard, GMFMC, Tampa, FL  
Page Campbell, TPWD, Rockport, TX  
Lee Green, TPWD, Rockport, TX  
Joe O'Hop, FMRI, St. Petersburg, FL  
John Poffenberger, NMFS, Miami, FL  
Joe Shepard, LDWF, Baton Rouge, LA  
Tom Van Devender, MDMR, Biloxi, MS

**Staff**

David Donaldson, Data Program Manager, Ocean Springs, MS  
Madeleine Travis, Staff Assistant, Ocean Springs, MS  
Larry Simpson, Executive Director, Ocean Springs, MS  
Gregg Bray, Survey Coordinator, Ocean Springs, MS  
Tom Sminkey, Programmer/Analyst, Ocean Springs, MS

**Others**

Kerwin Cuevas, MDMR, Biloxi, MS  
Jill Kelly, LDWF, Baton Rouge, LA  
Michelle Kasprzak, LDWF, Baton Rouge, LA  
Joe Smith, NMFS, Beaufort, NC  
Michael Bailey, NMFS, St. Petersburg, FL  
Chris Dorsett, GRN, New Orleans, LA

**Adoption of Agenda**

The agenda was adopted as written.

**Approval of Minutes**

The minutes for the meeting held on October 13, 1998 in San Antonio, Texas were approved as written.

**State/Federal Reports**

**Florida** - J. O'Hop reported that Florida is still processing trip tickets received in January and has corrected some problems regarding the Y2K issue. Work is continuing to move the commercial data base into Oracle format. Florida is conducting the Marine Recreational Fisheries Statistics Survey (MRFSS) on the east and west coasts of Florida. They currently have 28½ samplers working on the project. They have been exceeding quotas in all modes (SH, PR, and PC). The St. Petersburg staff is examining sampler performance. They are exploring the possibilities of using electronic scales for getting weights and are

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currently field testing the equipment. Florida is in the process of purchasing scriptwriters and will be testing them in conjunction with normal mailing protocols. There will be a fish identification workshop later this month to test the samplers knowledge to ensure that the species are being identified correctly. Florida is participating in the Atlantic Coast Cooperative Statistics Program (ACCSP) data management prototype. The system has been developed and currently being tested in Florida and the Northeast Region. Presently, there is only dummy data in the system but Florida is beginning to transfer 'real' data into system.

Mississippi - T. Van Devender stated the Department is continuing its work with the Cooperative Statistics Program (work started in 1984). There is one state and one federal port agent working in Mississippi and they focus on collecting weekly shrimp landings and Trip Interview Program (TIP) data. Mississippi has begun a new oyster collection program. Three sites have been designated as the only sites where oyster men can enter or exit. There are daily check stations to get a daily count of oyster harvest. Mississippi is in its 11<sup>th</sup> year of their state creel survey. This survey is being conducted in conjunction with the MRFSS sampling. They have purchased digital measuring boards and will be using them during the field sampling activities. As mentioned, Mississippi is participating in the MRFSS activities and sampling appears to be going fine. Mississippi closed the red snapper fishing in 1998 in conjunction with the NMFS closure and reopened fishing in January 1999. Due to Hurricane Georges, there was a request for TED exemptions in Mississippi waters. The tow times limitations were lifted. The legislature has been in session since January. There are several issues that are being discussed. There is a bill that would put law enforcement under the Department. And there is another bill that would affect the red snapper regulations. There is \$1 million available from the Bonne Carré disaster funds and Mississippi will use these funds in a variety of ways such as salinity monitoring equipment, purchasing BRDs, etc. There is also approximately \$150,000 available from the red tide disaster.

Louisiana - J. Shepard reported that Louisiana is also participating in the MRFSS and the program is operating fairly well. The samplers are working on updating the pressure estimates for the site register. The charter boat activity for this wave is pretty low but Louisiana should meet the base quota for the PC mode. Starting in wave 2, all the states have been conducting the economic add-on and J. Shepard is concerned that the questions contained in this survey may pose a problem in terms of cooperation of the anglers. Louisiana has implemented a trip ticket program, starting in January 1, 1999. The data collection and management efforts for the program are going okay. There has been some problem related to dealers completing the forms properly. Louisiana collected approximately 13,000 tickets in January. It has been estimated that there will be about 500,000 tickets collected per year. The data entry component of the program uses scanning technologies to enter the data. The staff is able to enter about 2,500 tickets per day. The legislature is meeting this year and there will probably be several bills introduced to eliminate the trip ticket program. However, the passage of such bills is not very likely. Another bill will examine ways to capture all the data that needs to be collected for sound management of the resources.

Texas - L. Green reported Texas is involved in developing a limited entry program for the shrimp industry. They received a donation to the Texas shrimp license buy back program. This program was established to purchase shrimp licenses to protect the declining shrimp stocks. To date, 255 shrimping licenses have been purchased. There is a shrimp initiative where TPWD personnel are contacting shrimpers to get input into developing management plans for the shrimp resources. The legislature convened in January and addressed the issue of establishing a limited entry program for commercial finfish fisheries. This program is patterned after shrimp and crab programs. TPWD is migrating the mainframe data base into a client-based system. A submerged sea grass management plan is being finalized. The main activity of the plan is that signs will be posted which will alert people of the presences of the sea grasses. Texas is beginning its routine spring gill-netting activities. These activities provided much of the information about the status of the fisheries. The high-use creel survey period will be beginning shortly. It covers the period of mid-May through mid-November. TPWD field personnel are currently testing the script writers for use in the creel survey. They

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are still evaluating the equipment; however, there has been problems encountered with these devices. TPWD is getting prepared to conduct another shrimp bycatch study. The first study was conducted in Aransas Bay. This study will be conducted in Matagorda Bay in both the spring and fall. TPWD vessels will be pulling paired trawls.

GMFMC - R. Leard reported that the Council is examining the vessel monitoring system (VMS) with several of the management plans being developed. The VMS technology is being considered for a variety of uses in fisheries management. The Council is working on an options paper which among other items, outlines the use of VMS in the shrimp fishery. It also looks at permitting and logbooks. The Council is looking at the potential of gag grouper becoming overfished under the new definition. Various regulation scenarios were examined and the Council voted to increase the minimum size limit and establish a closed area west of the Middle grounds off of Florida to both commercial and recreational fishing. The mackerel stock assessment update is scheduled to be delivered in the next week from NMFS and in two weeks, there will be the mackerel stock assessment meeting. One of the tasks at this meeting will be setting the TAC of mackerel. The Council is also expecting to receive the stock assessment for red grouper in June/July and red snapper in September. The Council will be examining the issue of limited access for the reef fish fisheries in the future. J. Poffenberger stated that ComFIN or this Subcommittee need to address the issue of area fished and need to develop a more precise grid for area fished.

NMFS - J. Poffenberger reported that NMFS is currently moving the commercial log book data base into an Oracle platform. This task should be completed by mid-summer 1999. This move will improve the efficiency of the data and make the data more readily available to users. J. Poffenberger stated that he has lost three people from his office and has not be able to replace them. Guy Davenport has set up a system where the port samplers are able to access the data and provide quality control/quality assurance by reviewing the data. The TIP data is being transferred into the Oracle environment and this activity is almost complete. NMFS is no longer processing any data on the old mainframe system. NMFS needs to still develop improved user-friendly routines to access the data.

GSMFC - D. Donaldson stated that the GSMFC is currently entering all of the recreational data from the field intercept survey being conducted in the Gulf of Mexico. NMFS was suppose to supply a fully operational data entry program to the GSMFC in November 1998 and the Commission is still waiting. However, the program does allow for entry of the data but it doesn't do all the activities necessary. A new contractor is working on the program and will hopefully be completed in the near future. The contractor is also developing the economic add-on component for the data entry program. The data entry program has numerous error checks which will not allow for entry of erroneous information. D. Donaldson stated that although the GSMFC did not receive a data entry program that would allow for entry of data until December 1998, the Commission was still able to deliver the data less than two weeks after the established deadline. Data entry works fairly well as long as there are not problems (data entry clerk becomes sick, holidays, etc.). To ensure that the Commission can continue to deliver the data in a timely manner, it will be hiring a backup data entry person to help with entry. J. Shepard asked when the Commission will be responsible for developing the assignments for the survey. D. Donaldson stated that NMFS has promised to deliver the program and the GSMFC will be running the draws for wave 3. This should stop the problems that have occurred with previous draws.

### RecFIN/ComFIN Issues

R. Lukens stated that there is some new monies available for commercial and recreational data collection activities in the Gulf of Mexico in the 1999 appropriations. This activity is a precursor to the scheduled meeting on Wednesday to discuss 1999 funding issues. The discussion involves determining what activities should be funded with the additional money. The Subcommittee reviewed the list of potential funding





activities for 1999. D. Donaldson noted that the items on the list has been discussed at FIN at some point and none of the items on the list have been decided on as activities that will be funded. The State/Federal Fishery Management Committee will make those decisions later in the week. The group discussed each of the items on the potential funding list. After some discussion, the group believed that the established list encompasses the activities that should be funded using the 1999 appropriations.

D. Donaldson stated that he wanted to take the opportunity to discuss any issues regarding the field intercept work. G. Bray stated that there has been some improvement in the number of errors found on the forms. He reviewed some of the most common errors encountered with the conduct of the field intercept survey being conducted in the Gulf of Mexico. He stated that the errors fall into two general categories - lack of following the pattern of the survey form and recording errors related to species caught. He pointed out that it is very important that the state supervisors talk with their samplers about the errors that are being made and let them know the proper way for completing the questions.

### **Other Business**

The Subcommittee traveled to Louisiana Department of Wildlife and Fisheries in Baton Rouge to look at the scanning technology utilized by the Louisiana trip ticket program.

**There being no further business, the meeting was adjourned at 11:45 a.m.**



APPROVED BY:

Vince Guillory  
COMMITTEE CHAIRMAN

*as amended*

**S-FFMC MENHADEN ADVISORY COMMITTEE  
MINUTES  
Tuesday, March 16, 1999  
New Orleans, LA**

Vince Guillory, Chairman, called the meeting to order at 1:03 p.m. Because a quorum was not met, it was agreed that the Committee would pass on items 1-3 until a quorum was met. It was noted that all the industry representatives were present.

**Members**

Joe Smith, NMFS, Beaufort, NC  
Dalton Berry, Omega Protein, Inc., Mandeville, LA  
Borden Wallace, Daybrook Fisheries, Inc., Empire, LA  
Ed Swindell, Daybrook Fisheries, Inc., Empire, LA  
Vince Guillory, LDWF, Bourg, LA  
Corky Perret, MDMR, Biloxi, MS (*Proxy for Glade Woods*)  
Barney White, Omega Protein, Inc., Houston, TX  
Wilmer LaPoint, Daybrook Fisheries, Inc., Empire, LA

**Staff**

Larry B. Simpson, Executive Director, Ocean Springs, MS  
Cindy Yocom, Staff Assistant, Ocean Springs, MS  
Steve VanderKooy, IJF Program Coordinator, Ocean Springs, MS  
Jeff Rester, SEAMAP/Habitat Program Coordinator, Ocean Springs, MS

**Others**

Mark Schernagder, LDWF, Baton Rouge, LA  
Richard Waller, IMS/USM/GCRL, Ocean Springs, MS  
Glenn Thomas, LDWF, Baton Rouge, LA

**Coastal Restoration in Louisiana**

Glenn Thomas (LDWF) made a presentation on "Coast 2050: Toward a Sustainable Coastal Louisiana." The program involves preserving and trying to recover the remaining sensitive areas in Louisiana. The land water interface will reach a peak in 2000 and decline rapidly after 2000. This would seriously impact brown shrimp and other estuarine dependent species. The results would predict a downward decline in these species as they follow the track of marsh loss as marsh edge is converted into open water.

As a result of the Quiper program (the Borough Act) millions have been spent on coastal restoration in Louisiana in the last ten years. About 10-15% of wetland loss has been addressed by that program. Coast 2050 is just wrapping up to take coastal restoration to the next level. The number coming out of the initiative suggests that over 90% of the wetland loss in Louisiana can be addressed at a cost of 14 billion dollars. The source of that money is being worked out right now.

Technical experts put the ecosystem needs together with what is acceptable to the public. They looked at hundreds of little bay systems throughout Louisiana and built coast wide strategies with the public's comments fully considered. Meetings with the general public, special interest groups, and parish representatives allowed the teams to put together all the ideas and concerns into a plan that everyone would find acceptable. Consensus building resulted in a strategic coastal plan to address the majority of coastal loss

## **S-FFMC MENHADEN ADVISORY COMMITTEE**

### **MINUTES**

**Tuesday, March 16, 1999**

**New Orleans, LA**

Vince Guillory, Chairman, called the meeting to order at 1:03 p.m. Because a quorum was not met, it was agreed that the Committee would pass on items 1-3 until a quorum was met. It was noted that all the industry representatives were present.

#### **Members**

Joe Smith, NMFS, Beaufort, NC  
Dalton Berry, Omega Protein, Inc., Mandeville, LA  
Borden Wallace, Daybrook Fisheries, Inc., Empire, LA  
Ed Swindell, Daybrook Fisheries, Inc., Empire, LA  
Vince Guillory, LDWF, Bourg, LA  
Corky Perret, MDMR, Biloxi, MS (*Proxy for Glade Woods*)  
Barney White, Omega Protein, Inc., Houston, TX  
Wilmer LaPoint, Daybrook Fisheries, Inc., Empire, LA

#### **Staff**

Larry B. Simpson, Executive Director, Ocean Springs, MS  
Cindy Yocom, Staff Assistant, Ocean Springs, MS  
Steve VanderKooy, IJF Program Coordinator, Ocean Springs, MS  
Jeff Rester, SEAMAP/Habitat Program Coordinator, Ocean Springs, MS

#### **Others**

Mark Schernagder, LDWF, Baton Rouge, LA  
Richard Waller, IMS/USM/GCRL, Ocean Springs, MS  
Glenn Thomas, LDWF, Baton Rouge, LA

### **Coastal Restoration in Louisiana**

Glenn Thomas (LDWF) made a presentation on "Coast 2050: Toward a Sustainable Coastal Louisiana." The program involves preserving and trying to recover the remaining sensitive areas in Louisiana. The land water interface will reach a peak in 2000 and decline rapidly after 2000. This would seriously impact brown shrimp and other estuarine dependent species. The results would predict a downward decline in these species as they follow the track of marsh loss as marsh edge is converted into open water.

As a result of the Quiper program (the Borough Act) millions have been spent on coastal restoration in Louisiana in the last ten years. About 10-15% of wetland loss has been addressed by that program. Coast 2050 is just wrapping up to take coastal restoration to the next level. The number coming out of the initiative suggests that over 90% of the wetland loss in Louisiana can be addressed at a cost of 14 billion dollars. The source of that money is being worked out right now.

Technical experts put the ecosystem needs together with what is acceptable to the public. They looked at hundreds of little bay systems throughout Louisiana and built coast wide strategies with the public's comments fully considered. Meetings with the general public, special interest groups, and parish representatives allowed the teams to put together all the ideas and concerns into a plan that everyone would find acceptable. Consensus building resulted in a strategic coastal plan to address the majority of coastal loss

by the year 2050. Most of the strategies addressed hydrology issues in an effort to restore drainage and inputs into freshwater marshes and swamps. Freshwater diversions, preservation of land bridges, dedicated dredging, shoreline stabilization, sediment collection traps, and water controls are all proposed to restore the natural hydrologic conditions which have been altered in the past.

G. Thomas went on to describe various proposed projects. A summary of the initiative can be found in Attachment 1.

In addition, the Army Corps has submitted proposals to deal with flood controls especially for hurricane protection (Attachment 2). These massive projects will result in additional marsh loss but are a compromise to protect several at-risk communities, especially around Houma. Attempts will be made to reduce fisheries impacts but protection is absolutely necessary. The potential to impact crabs and menhaden is significant.

### **Review of 98 Fishing Season**

J. Smith reported that this marks the 27<sup>th</sup> year of forecasting. New software will make the future reports a little more interesting. The Gulf catch for 1998 was 486,000 mt down 20% from 1997 and 15% for the five year average (Attachment 3). The 1998 season started strong and was actually ahead of the 1997 landings for April and May. June was windy reducing the landings, July was good but followed by declining landings for the rest of the year. In 1998, May landings suffered due to the fires in Mexico preventing sightings of schools. June winds kept the fleet in and four tropical storms and one hurricane from August through September continued to impact the fishery.

Five factories operated with fifty boats (two were bait boats). Age 2's were more than twice the number of age 1's sampled coastwide with the exception of Empire which had more age 1's. This continues to be a reversal of age class distribution which has persisted over the last couple of years. Effort projected for 1998 was 462,000 vessel/ton/weeks and figured into the forecast as 609,000 mt. The effort was down considerably from the prediction, the estimated effort for 1998 is now set at 409,000 vessel/ton/weeks.

Forecast for 1999 indicates fifty-one vessels in the fleet and two bait boats we estimate 462,000 vessel/ton/weeks and landings of 567,000 mt. We were encouraged by reports of peanuts in eastern Texas and western Louisiana last year. This suggests that age 1 fish may once again dominate. However, 1999 will still be in the "la Nina" cycle so the actual landings may or may not meet the forecast.

Updating the Committee on business from Beaufort, the funding is now at the Commission for the three contractual samplers in the western ports and the samplers out of the New Orleans office. A NMFS Pascagoula employee will be sampling Moss Point. The NMFS lab in Miami asked about the condition of sampling vehicles, however, they want us to annually lease new vehicles which leaves open the possibility of not always having the vehicles. Ownership is much more long term. A small budget has been provided to purchase equipment such as electronic scales, etc.

The blank CDFR forms for 1999 should be back from the printer and delivered by April 1 to the plants. The 1998 CDFRs are still being key entered. We used to use contractors in Raleigh to key enter the data but they have now gone out of business so we are entering the data in-house. Its going slow but it is getting done.

The Beaufort NMFS lab is 100 years old in 1999. With the anniversary comes a few changes, the basic fishery group remains the same but the habitat group (about 60 people) are now going into National Ocean Service, the menhaden and reef groups will remain. We are now called Coastal Center for Fisheries and Habitat Research, a hybrid NOAA lab under one roof but some problems are already apparent with personnel actions going to two different offices, Kansas City and Maryland. Some duplication will exist. Doug Vaughan is now partnered with Mike Prager who has joined the group to provide analytical support to Doug.

The assessment from last year is still a draft but the review process has pushed for it to go to Fishery Bulletin. The assessment will be reduced in size for publication and may be shorter for the revision of the FMP. John Merriner is taking over as editor of Fishery Bulletin and looking for papers to anyone who is interested.

On the Atlantic Coast, after the Atlantic Menhaden meeting the ASMFC pushed the Atlantic plan to the review process. The assessment and the whole plan was seriously scrutinized. The independent reviewers recommended dropping four of the six triggers to evaluate the status of the fishery and suggested looking at quota systems. A plan development team has been put together by the ASMFC to begin their revision process. Several bills have been floating around on the Atlantic. A bill in New Jersey proposes moving reduction boats further offshore to 3 miles and bait boats out of the bays to 2 miles. The bait section of the bill was removed but we have no additional information. In the southern counties of North Carolina similar legislation is being considered. Representative Redwine will be introducing a bill to move the boats off the beaches solely for aesthetic purposes. Lastly, John Frye's book has been reprinted and is available.

### **Louisiana Department of Wildlife and Fisheries Forecast**

V. Guillory made a brief report on the menhaden monitoring data in Louisiana and their 1999 forecast based on environmental parameters and juvenile abundance. The January water temperature of Grand Isle was 15.2°C which was well above the long-term mean of 13.3°C. This is usually a pretty good indicator for the following year, for example 1998 was higher also suggesting that 1999 may be a year with poor recruitment based on history. In addition, salinities off Grand Isle in 1998 were well below the average of 20.5‰. Low salinities have historically been associated with low recruitment. March discharge in the Mississippi River and southeast Louisiana rainfall are two other parameters that are looked at. Both were high in 1997 and 1998 suggesting, again, poor recruitment for menhaden in 1999. However, based on the juvenile menhaden index, 1998 was above the long-term mean suggesting that even though conditions are poor for recruitment in 1998, therefore 1999 should be a good year according to the LDWF sampling of juveniles. V. Guillory indicated he would mail out the summary very shortly to the MAC.

### **Introductions and Opening Comments**

A quorum was met at 2:30 p.m. with the arrival of the last member.

### **Adoption of Agenda**

**E. Swindell moved to adopt the agenda, B. Wallace seconded and the motion passed.**

### **Approval of Minutes**

**B. Wallace moved to accept the minutes from the October 14, 1998 meeting in San Antonio, Texas.  
C. Perret seconded and the motion passed.**

### **Status of the GSMFC Data Collection Program**

L. Simpson reiterated that based on the gulf menhaden stock assessment by Doug Vaughan (NMFS, Beaufort N.C.) we have a very healthy fishery and recent efforts, headed by the Commission, have resulted in a good data system and data collection program. The Commission is working cooperatively with J. Smith and enjoy a healthy relationship with NMFS. However, the data collection program is not all it could be. We need some improvements to make the system excellent. The port samplers is not a tough program to sustain but has a tendency to be a year-to-year arrangement and the timing for NMFS to provide funds for the program can be slow. The mechanisms are the problem. To improve the program, we would like to place menhaden

under one program which we are presently putting together. Menhaden can easily be incorporated into the data program if the MAC should chose to do so. Such a program would allow us to interface in new ways with NMFS and J. Smith. The Commission has initiated a \$3.0 million dollar program for recreational data collection. We are looking for an additional \$4.0 million to pick up the commercial data collection. If the MAC wants to include menhaden port sampling in the commercial component of the program we need to know and so does Washington, D.C. The Commission's program would enhance the data we are currently collecting, simplify the funding process, and speed up the entry of the daily fishing logs. The Commission's money is coming from GulfFIN as a line item. It is coming straight to the Gulf as direct appropriations from Congress. The Magnuson Act amendments clearly state that this money and this type of program can be authorized.

B. Wallace asked about the chances that if we give up a system that is not perfect but works for your program that we risk one day not getting funding because the whole program has been washed? What are the chances the program will be dissolved? L. Simpson reassured that the program is here to stay. Data will always be needed. Menhaden is such a small program to fund out of 3 million. Doesn't this make a larger target for budget cutting? Simpson says no. Once the programs are in place it will be an ongoing program. Does the S-FFMC decide what programs will be funded within the Commissions data program? Is the MAC going to have to battle with the S-FFMC for that funding each year? Yes, but its not going to be a battle. This is a small amount of money, it shouldn't be contested. E. Swindell asked about how the data will be used. Would J. Smith still be able to provide industry with fishery data? Yes, it would be placed on the net and could be dumped to NMFS anytime. C. Perret pointed out that good data is the real issue in whether to include menhaden in the data collection program. L. Simpson reassured that the data would remain confidential, those issues shouldn't come up.

E. Swindell asked how this relates to the Atlantic States data collection program. J. Smith pointed out that on the Atlantic, they have hard money for samplers on the Atlantic. Also there are only two ports and 15 vessels so the money is easy and the captains daily reports can be handled easily in-house.

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### **FMP Revision Schedule**

S. VanderKooy reported that the revision of the menhaden plan will begin early this summer. Depending on how much time the current plans require, the plan should move along fairly quickly. At this time the plan will be more of an update than a rewrite. The Stock Assessment Team will be meeting in June or July to look at the menhaden stock assessment. Recent work on the Atlantic stock assessment has suggested that the SAT would probably get a lot out of a meeting with Doug Vaughan and this would contribute directly into the revision. The Atlantic plan was very critically reviewed but the stock assessment was determined to be thorough. This is not to suggest that there is a problem with the stock assessment for the Gulf.

### **Other Business**

The next MAC meeting will be the third week of October (October 18-22) in Biloxi, Mississippi at the Casino Magic Resort. In October of 2000, all three commissions will be meeting together in Florida. A location has not yet been selected.

**There being no further business, the meeting adjourned at 4:53 p.m.**

**COAST 2050:  
Toward a Sustainable  
Coastal Louisiana**

**Executive Summary**

**WITHOUT BOLD ACTION NOW,  
A NATIONAL TREASURE COULD BE LOST  
FOREVER.**



A NATIONAL TREASURE

COULD BE LOST FOREVER.

THE CONSENSUS SOLUTION

IS BOLD AND REALISTIC;

CHALLENGING, BUT ATTAINABLE.

TO SURVIVE AND PROSPER,

A NEW ERA OF STEWARDSHIP

MUST BEGIN NOW.

At the end of Old Man River, the Mighty Mississippi, lies the largest expanse of coastal wetlands in North America. This dynamic and bountiful landscape was literally built and sustained by the sediment-laden waters that drain to the Mississippi River from 31 states and three Canadian provinces.

The Louisiana coast is home to two million Americans. The wetlands, bays and islands of the coast constitute an enormously productive ecosystem and resource base that supports the livelihood and well-being of the nation. The statistics are awesome: 18% of U.S. oil production and 24% of U.S. gas production come from coastal Louisiana and the adjacent Gulf of Mexico, with an annual value of \$17 billion; Louisiana's ports rank first in the nation in shipping tonnage; the ecosystem contributes nearly 30% by weight of the total commercial fisheries harvest in the lower 48 states, and provides over-wintering habitat for 70% of the migratory waterfowl using the Central and Mississippi Flyways.

Louisiana's cultures, communities, and history are integral to our national identity and are tied to the future of this coast that is at risk.

Since 1930, Louisiana has lost more than 1,500 square miles of marsh. The state is still losing 25 to 30 square miles each year, nearly a football field of prime wetland every 15 to 20 minutes.

There is no one reason for this land loss. Louisiana's coastal wetlands have always been subsiding, but in the past, the river built and sustained other wetlands, which offset the natural losses. Since Europeans came to Louisiana, we have been building levees to protect against floods. Levees keep homes, businesses and farms safe, but prevent sediments that nourish the marshes from reaching them. Without sediment, water, and nutrients, subsidence can overtake marsh growth and lead to marsh loss.

Canals were dug through the marshes to promote navigation and to

recover the petroleum resources that help fuel the nation. North/south canals bring saltier water and stronger tides into fresh marshes, while east/west canals and levees can hold excess water on the marsh and swamp. These hydrologic changes can lead to conditions that kill marsh vegetation. Hurricanes can rip up marsh and erode islands and the shoreline of bays and lakes.

Today Louisiana has 3,800 square miles of marsh and over 800 square miles of swamp. Even at the current pace of restoration efforts, by 2050 we will lose more than 600 square miles of marsh and almost 400 square miles of swamp. This means that nearly 1,000 square miles of Louisiana's wetlands will be become open water. If we allow this to happen, the nation will lose an area nearly the size of Rhode Island.

As marshes surrounding coastal communities and urban centers, such as New Orleans, turn to open water, the risk of catastrophic damage from hurricanes will rise dramatically.

As wetlands and barrier islands disappear, the wells, pipelines, ports and roads that make the oil and natural gas industry possible will be exposed to open water conditions. These facilities will need to be replaced at a high cost, and the potential for damaging oil spills will increase.

If we do nothing, we face significant reductions in the \$20 billion per year shipping export industry that depends on Louisiana's ports, and the 30% of the nation's fish catch that depends on Louisiana's coastal waters.

This devastating problem has already received much attention, and some funding for solutions -- up to \$50 million each year during the 1990s. We have learned two things: first, we already know how to fix most of the problems, and second, coastal preservation and recovery

will require much more effort than has been undertaken so far.

A road map to increased effort is presented in "Coast 2050, Toward a Sustainable Coastal Louisiana." This strategic plan for the survival of Louisiana's coast was prepared at the urging of citizens from across the state and nation. Coast 2050 involved federal, state, and local entities, landowners, environmentalists, wetland scientists, and others. The planning process was carefully crafted to maximize common ground. Through 65 public meetings and workshops, technically sound solutions were found to meet ecosystem needs and reflect public acceptance and support.

In the past, Louisiana's restoration efforts have suffered from fragmentation and lack of consensus. Coast 2050 represents a dramatic change: its integrated, multiple use approach to ecosystem management has received the support of the federal and state agencies responsible for coastal management (Page 9). All 20 Coastal Parishes passed resolutions of support.

The key to successfully restoring a sustainable ecosystem is to manage and use the natural forces that created the Louisiana coast: the river, the climate, and the rise and fall of the Gulf of Mexico. The goals of Coast 2050 are to create and sustain marsh by accumulating sediment and organic matter; to maintain habitat diversity by varying salinities and protecting key land forms; and to maintain the exchange of energy and organisms. The main strategies of the plan are 1) watershed management, such as river diversions and improved drainage; and 2) watershed structural repair, such as restoration of barrier islands.

In the Pontchartrain Basin, we must close the Mississippi River Gulf Outlet as soon as possible. Also, river diversions into swamps are needed to restore natural hydrology.

The Atchafalaya River must continue to carry sediments and

nutrients to nearby healthy marshes. In addition, more river water must be directed further east and south to support marshes that are no longer self-maintaining.

In the Barataria/Terrebonne area of the central coast, the lack of sediment in conjunction with subsidence has produced a coastal system that is collapsing. The Mississippi River provides the opportunity to rebuild marsh near the river. The funneling of vast amounts of sediments into the deep waters of the gulf must be stopped.

In the severely eroding marshes adjacent to Bayou Lafourche, Coast 2050 includes the bold concept of a 60-mile long conveyance channel from the Mississippi River to build two new deltas, one on either side of Bayou Lafourche.

In the Calcasieu/Sabine area of western Louisiana, saltwater brought into marshes from navigation channels and canals caused extensive land loss. Seasonally-operated locks at the mouths of the navigation channels would help these marshes recover from salinity stress.

Construction of the strategies recommended by Coast 2050 would cost about \$14 billion. This represents more than a ten-fold increase over the current investment of the Breaux Act Program. However, the cost of not implementing such strategies is even more -- an estimated loss in public use value of over \$37 billion over the next 50 years.

Ongoing coastal restoration has identified many challenges that must be overcome - remote construction locations, the presence of existing infrastructure (communities, roads, levees, navigation channels, etc.), land rights acquisition, land ownership, regulatory requirements, navigation conflicts, compensation for lost income, and mitigation of adverse impacts including induced flooding.

The solution is attainable. Progress is being made on some difficult implementation issues. The state of Louisiana has amended its

Constitution to allow resolution of some land ownership issues. The state has developed an "Oyster Lease Relocation Program" to address potential adverse impacts of restoration efforts to oyster leases. Monitoring of completed projects proves that the techniques exist to build and maintain wetlands. Results from operation of the Caernarvon Freshwater Diversion show that river water and sediments can restore marsh over a large area.

Why should the nation and the state of Louisiana invest billions of dollars to restore coastal Louisiana? Because it is a wintering area for migratory waterfowl? Because the barrier islands provide nesting areas for sea birds and wading birds? Because the coastal wetlands are beautiful and mysterious? Because the culture is rich, the gumbo good, and the music exhilarating? These alone may be ample reasons, but there are others that are far more compelling.

The entire nation depends on these wetlands for much of its fisheries catch, oil and gas production, navigation, and so much more. Coastal communities large and small, from New Orleans to Golden Meadow, Houma to Grand Chenier, depend on Louisiana's coastal wetlands for hurricane protection and their ultimate survival. It's about survival of one of the world's greatest natural, cultural, and economic resources. It's about sustainability, so the nation's children can continue to reap the benefits of this thriving resource.

What will Louisiana and the nation get for their investment? We will get a sustainable and highly productive landscape, and prevent the loss of nearly 1,000 square miles of coastal America.

Maintenance of a viable coastal wetlands ecosystem will preserve tens of thousands of jobs in industries that are supported or protected by this vital landscape. The coastal and offshore oil & gas industry and supporting vendors alone provide nearly 90,000 direct jobs.

The estimated \$14 billion cost of Coast 2050 is small compared to the cost of abandoning coastal Louisiana, relocating its citizens and restructuring its economy. Economic prosperity and cultural well-being are the simple and compelling reasons why Louisiana citizens have joined in support of the new plan to protect and restore the coast.

History teaches that when nations and civilizations lose their resource base they usually decline. The Louisiana coastal ecosystem has been damaged almost to the point where decline is inevitable. Yet, the Coast 2050 plan demonstrates that a self-sustaining ecosystem can be restored and maintained along the Louisiana coast, in combination with the facilities needed to support a growing economy. The investment is not only for the future of Louisiana, but the future of the nation.

If America is to win this battle for survival of one of its greatest natural resources it will take more than money and bold vision. Better stewardship and a holistic approach to managing the coast are needed to sustain this national treasure.

The need for stewardship has been recognized for more than a decade and is evidenced by a vote of Louisiana's citizens for a constitutional amendment, and by Congress with the passage of the Breaux Act in 1990. These efforts paved the way for a New Era of Stewardship - an era that begins with Coast 2050.

Stewardship requires us to care for and nurture what we have and what we are given. For the coast of Louisiana to survive, we must change the way we do business. All decisions that affect the coastal environment need to address the sustainability and integrity of the coastal ecosystem. Restoration and management funds must be allocated in accordance with the Coast 2050 strategies.

The breadth of support for the Coast 2050 demonstrates that the citizens of Louisiana are ready and eager for this new era. Coast

2050 gives Louisiana's coast a fighting chance.

The Coast 2050 strategies will work best if the existing ecosystem is here to build upon. Today the coastal ecosystem, while damaged, is sufficiently intact for restoration to succeed. Within a few decades, the ecosystem will have collapsed to the point that natural landforms will be gone, and our ability to use nature to achieve a high level of sustainable productivity will also be gone.

We have all heard the adage: "Pay now, or pay later." Left unchecked, future land loss would put at risk over \$100 billion in infrastructure and resources. We have two options: invest \$14 billion in Coast 2050, or suffer immense future costs. The right choice is clear: Coast 2050.

Coast 2050 is a strategic vision to wisely direct the use, management, and restoration of our coast for the broadest sustainable benefit. What Coast 2050 does guarantee is a fighting chance. Without it, coastal Louisiana as we now know it will cease to exist.

We have only a short window of opportunity to get the most value from natural landforms and processes, and to achieve ecosystem sustainability. The need for action is clear. The time for action is now.



*Coast 2050 is a joint effort of the citizens of Louisiana, under the auspices of the following agencies:*

**Federal Louisiana Coastal Wetlands Conservation and Restoration Task Force:**

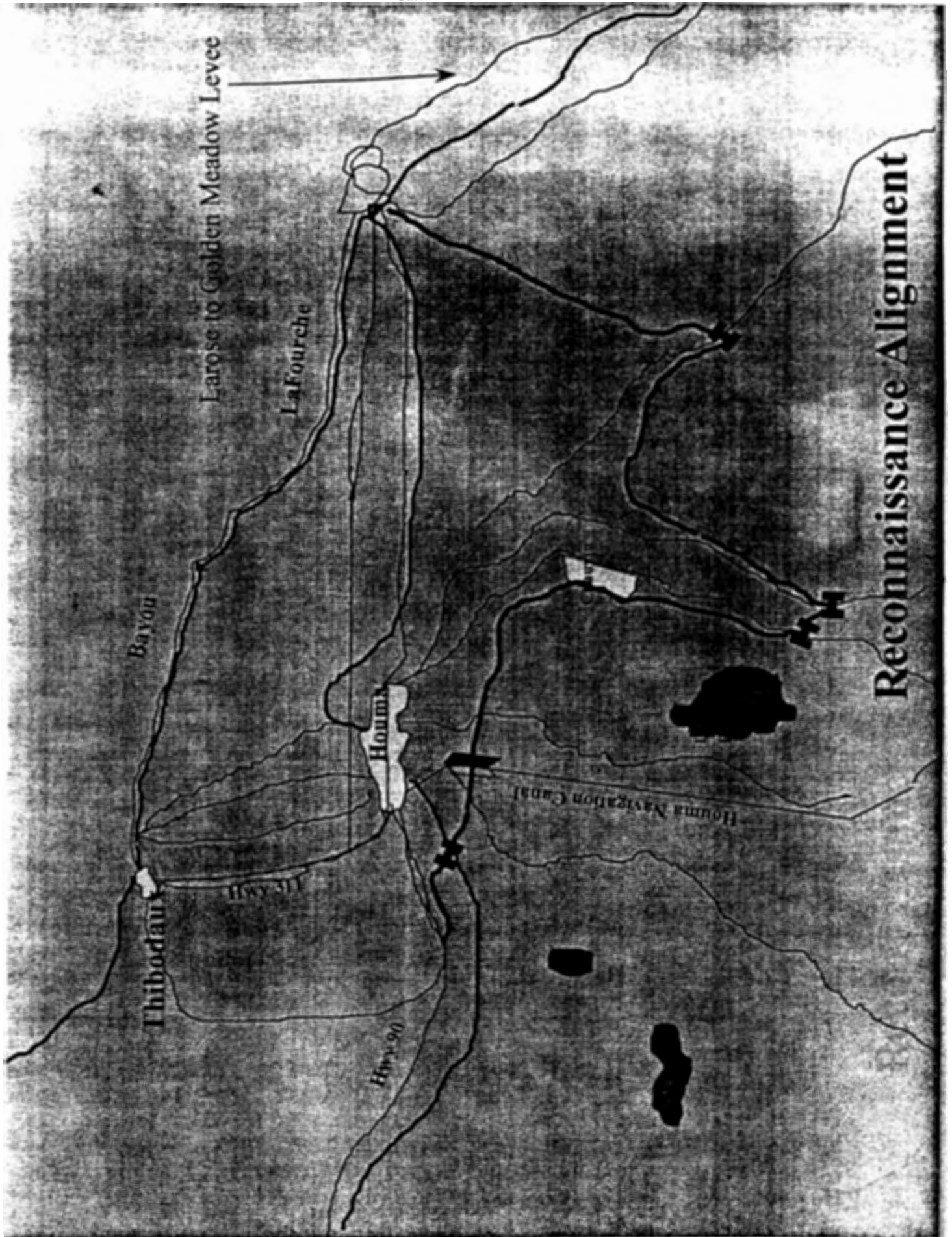
U.S. Army Corps of Engineers  
U.S. Department of Commerce, National Marine Fisheries Service  
U.S. Department of Interior, U.S. Fish and Wildlife Service  
U.S. Department of Agriculture, Natural Resources Conservation Service  
U.S. Environmental Protection Agency  
Office of the Governor

**Louisiana State Wetlands Conservation and Restoration Authority:**

Office of the Governor  
Department of Natural Resources  
Department of Transportation and Development  
Division of Administration  
Department of Environmental Quality  
Department of Wildlife and Fisheries  
State Soil and Water Conservation Committee

*"...it is time for us to recognize that if we are to be truly successful in our efforts to restore our coast to a state of sustainable, productive health, that we must dedicate ourselves to the cause of protection and restoring our coastal wetlands and barrier islands in order that we can secure for ourselves and those who follow us the blessings and values that we and our forebears have enjoyed from these precious natural resources."*

*Murphy J. "Mike" Foster, Governor  
Proclamation, May 1, 1997*



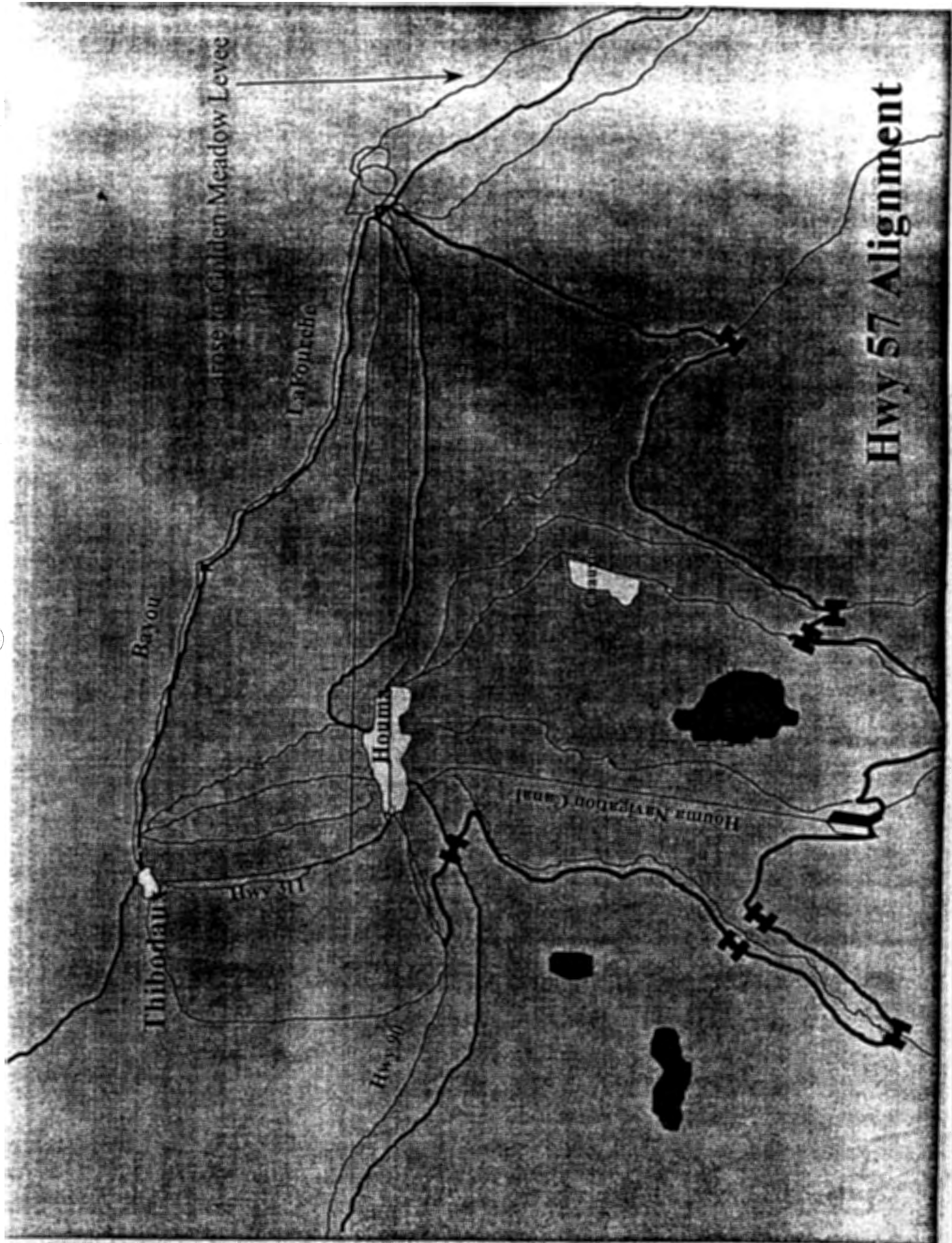
Morganza to the Gulf Study - ALTERNATIVE 5  
Structures by Subbasin

Sub Basin	Str. No.	Structure Description	Fish & Wildlife Purpose	Comments
A	35	<b>GIWW Lock/Gate</b>	Design	Maximize eastward FW flow
B	36	<b>HNC Lock, Crozier Alternative</b>	Design	Max. southward FW flow
B	37	<b>Bayou Grand Caillou north of Ashland*</b>		Sub. existing pump sta. for str.
C	15	<b>Bayou Petit Caillou Floodgate</b>		
D	13	<b>Bayou Terrebonne Floodgate</b>		
D	14	Bayou LaCache Str.		
E	8	<b>Isle Jean Charles Floodgate</b>		
E	12	<b>Humble Canal Floodgate</b>		
F	6	<b>Bayou Pointe au Chien Floodgate</b>		
F	6a	Borrow Canal Str.	Mitig.	
F	9	Point Farm Road Str.	Mitig.	
G	2	<b>Grand Bayou Canal Floodgate</b>	Design	Maximize southward FW flow
G	1	West Dresser Canal Str.	Mitig.	
G	3	South Pipeline Canal Str.	Mitig.	
G	4	North Grand Bayou Unit Str.		Must be replaced by the project
	5	South Grand Bayou Unit Str.		Must be replaced by the project

**Bold=flood control structure**

**Large Type= existing structure**

\* May not be needed because the bayou is so small



# Hwy 57 Alignment

Morganza to the Gulf Study - ALTERNATIVE 3  
Structures by Subbasin

Sub Basin	Str. No.	Structure Description	Fish & Wildlife Purpose	Comments
A	31	<b>Bayou Dularge Floodgate</b>		
A	32	<b>Falgout C. Floodgate, w of B.Dularge</b>		
A	33	<b>Marmande Canal</b>		Subject to moving the levee
A	34	<b>E. Lake Hatch drainage str.</b>		Subject to moving the levee
A	35	<b>GIWW Lock/Gate</b>	Design	Maximize eastward FW flow
B	27a	B. Grand Caillou Floodgate/Str.	Mitig.	In lieu of Lock by-pass channel
B	28	Falgout Canal East FW Intro.	Mitig	
B	29	Falgout Canal West FW Intro.	Mitig.	
C	16a	<b>South Bayou Petit Caillou Floodgate</b>		
C	27	<b>HNC Lock, south Alternative</b>	Design	May need to allow southward FV
C	17	Hwy 57 east Str.	Mitig.	
C	17a	Hwy 57 west Str.	Mitig.	
D	13	<b>Bayou Terrebonne Floodgate</b>		
D	16	<b>West Bush Canal Floodgate</b>		
D	14	Bayou LaCache Str.		
E	8	<b>Isle Jean Charles Floodgate</b>		
E	12	<b>Humble Canal Floodgate</b>		
F	6	<b>Bayou Pointe au Chien Floodgate</b>		
F	6a	Borrow Canal Str.	Mitig.	
F	9	Point Farm Rd. Str.	Mitig.	
G	2	<b>Grand Bayou Canal Floodgate</b>	Design	Maximize southward FW flow
G	1	West Dresser Canal Str.	Mitig.	
G	3	South Pipeline Canal Str.	Mitig.	
G	4	North Grand Bayou Unit Str.		Must be replaced by the project
G	5	South Grand Bayou Unit Str.		Must be replaced by the project

**Bold=flood control structure**

**Large Type= existing structure**

FORECAST FOR THE 1999  
GULF AND ATLANTIC MENHADEN  
PURSE-SEINE FISHERIES  
AND REVIEW OF THE 1998  
FISHING SEASON  
MARCH 1999

JOSEPH W. SMITH AND  
THE POPULATION DYNAMICS TEAM  
BEAUFORT LABORATORY  
SE FISHERIES SCIENCE CENTER  
NATIONAL MARINE FISHERIES SERVICE  
NOAA

## INTRODUCTION

The 1999 fishing year is the twenty-seventh year for which quantitative forecasts of purse-seine landings of gulf and Atlantic menhaden have been made by the Beaufort Laboratory of the National Marine Fisheries Service. The first forecasts were made in spring 1973. The forecasts are based on a multiple regression equation that relates landings and fishing effort over a series of years. Our 1999 forecasts of landings are conditioned on estimates of expected fishing effort for the upcoming fishing year. Estimates of effort are vessel-specific and are primarily derived from 1) industry input, that is, the number of vessels that companies expect to be active during the upcoming fishing year, and 2) historical performance (catch and effort) of the vessels expected to participate in the fishery. In the Atlantic menhaden fishery, actual purse-seine landings (Figure 1) have differed an average of 12 percent from those forecast for the twenty-six year period, 1973-98. Landings in the gulf menhaden fishery have differed from those forecast by an average of 17 percent for the same period.

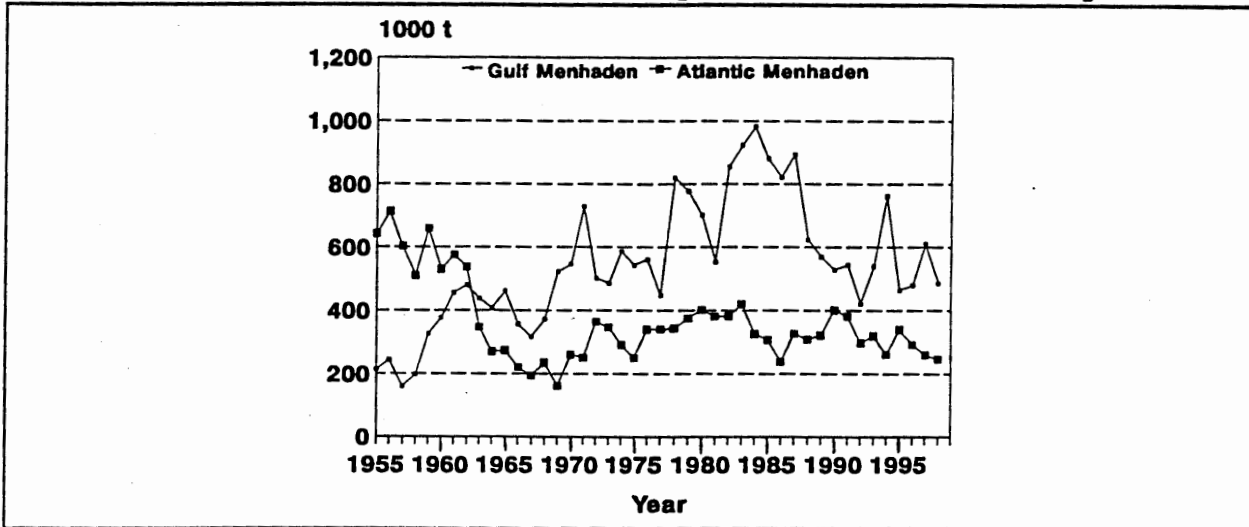


Figure 1 Gulf and Atlantic menhaden landings, 1955-98.

## Gulf Menhaden Landings and Vessel Participation in 1998

Final landings of gulf menhaden for reduction in 1998 amounted to 486,205 metric tons (1,599 million "standard" fish). This was down 20 percent from total landings in 1997 (611,217 t), and down 15 percent from the previous five-year average (571,063 t) (Figure 1 and Table 1). Monthly landings during April (24,900 t) and May (98,100 t) 1998 were ahead of landings for respective months in 1997 (Figure 2). Catches declined in June 1998 (77,500 t), rebounded in July (114,100 t), then declined in August (89,300 t). Monthly landings fell sharply in September (35,400 t) and October (46,900 t). Landings in September 1998 were the lowest on record for that month since 1967 (32,421 t).

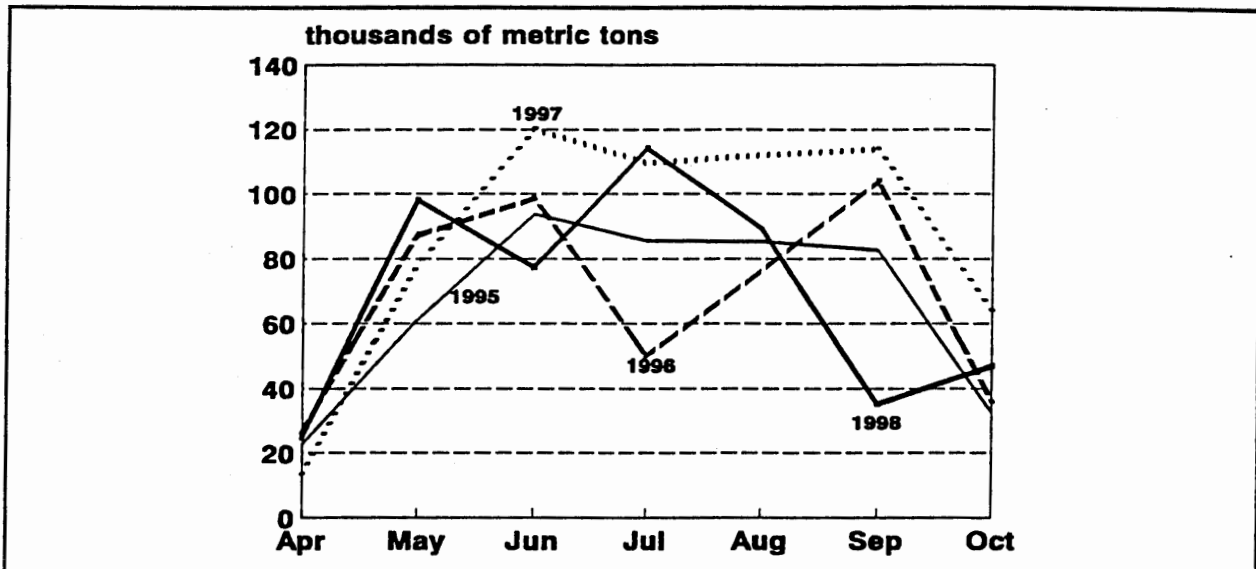


Figure 2 Gulf menhaden landings by month, 1995-98.

Despite the periodic abundance of fish in several coastal areas of the northern Gulf, tropical storms, hurricanes, and haze from forest and marsh fires were the chief antagonists of the gulf menhaden purse-seine fishery in 1998. In May, excellent catches were made in Chandeleur Sound by the fleets from Empire and Moss Point. However, for two weeks in mid-May haze and smoke from forest fires in Mexico streamed north and hampered fish spotting operations near the western ports of Morgan City, Abbeville, and Cameron. June in the western Gulf was windy and wet. Run-off from rainfall turned near-shore waters turbid making fish spotting difficult. Mississippi Sound produced good catches in late June and early July. Catches in the western Gulf finally improved in July, although smoke from numerous local marsh fires frustrated fish spotters near Abbeville and Cameron during early August. Beginning with Tropical Storm Charley in mid-August and continuing for almost four consecutive weeks in September, the Gulf fishery was plagued by poor weather through September 30 from tropical

storms Earl, Frances, and Hermine, and Hurricane Georges. During early October, conditions improved and vessels in the central and western Gulf fished on good concentrations of menhaden, however, during late October turbid, near-shore waters once again made fish spotting difficult.

As in 1997, five menhaden reduction factories operated on the Gulf Coast in 1998: Moss Point in Mississippi, and Empire, Morgan City, Abbeville, and Cameron in Louisiana. A total of 50 vessels reported unloading gulf menhaden for reduction in 1998, although two offloaded mostly for bait.

**Age Composition of the Gulf Menhaden Samples in 1998**

Approximately 8,640 gulf menhaden were aged from port samples in 1998 (Figure 3). Coastwide, age-2 fish (63%) predominate over age-1 fish (29%) by more than a two-to-one margin. Age-3+ fish (8%) rounded out the remainder of the samples. Age-2 fish predominate in samples from Moss Point (67%), Morgan City (73%), Abbeville (72%), and Cameron (64%). Age-1 fish predominated in samples from Empire (68%).

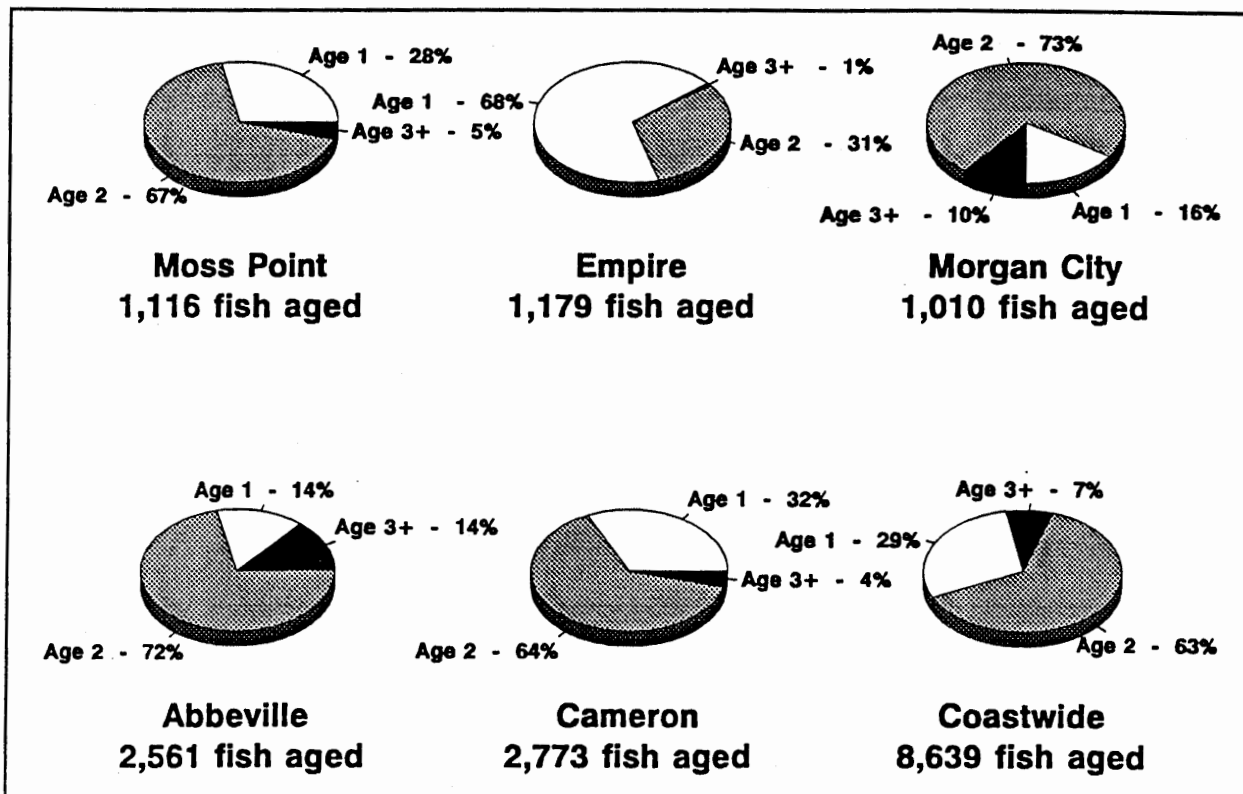


Figure 3 Age composition of gulf menhaden in 1998 port samples.



## Fishing Effort in 1998 and Review of the 1998 Forecast

In Spring 1998 we anticipated that nominal fishing effort during the 1998 fishing season could amount to 462,000 vessel ton weeks (with 51 vessels), and we forecasted 1998 gulf menhaden landings of 609,000 t with 80 percent confidence levels of 479,000 and 738,000 t. In fact, nominal fishing effort amounted to 409,300 vessel ton weeks. This was 11 percent less than we anticipated in March (no doubt due to haze, storms, and run-off), and five percent less than observed nominal effort in 1997 (430,200 vessel ton weeks). A "hindcast" using our forecast model and nominal fishing effort for 1998 produced a post-season forecast of 543,000 t (Figure 4) with 80 percent confidence levels of 414,000 and 672,000 t. Actual landings of 486,205 t were 10 percent less than our post-season hindcast.

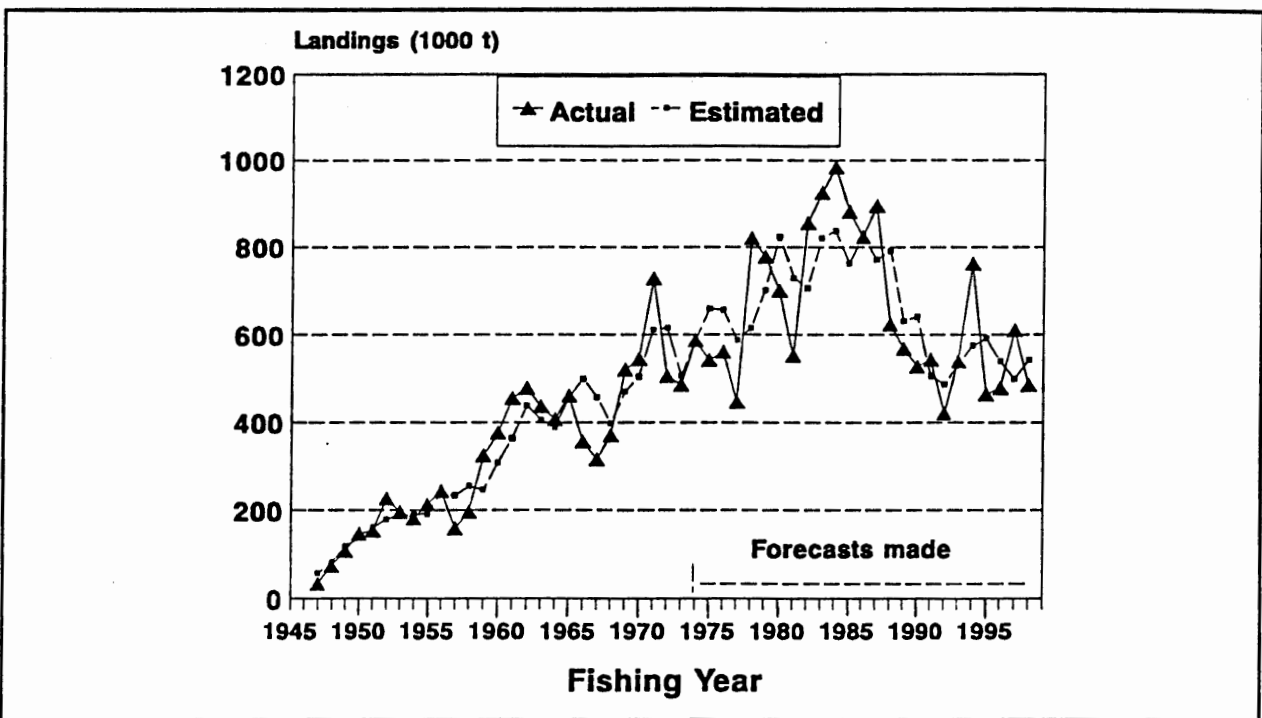


Figure 4 Gulf menhaden landings and forecasts, 1946-98.

## Forecast of Gulf Menhaden Landings in 1999

During 1999, five menhaden factories will operate on the Gulf Coast, the same as in 1998. Our best estimate of vessel participation in 1999 is 51 vessels (with two or three additional vessels landings primarily for bait), three more than in 1998. Based on average nominal fishing effort expended by these vessels during recent fishing seasons, we expect that nominal fishing effort in the 1999 gulf menhaden fishery may be about 462,000

vessel ton weeks. With this level of effort, our regression equation predicts 1999 gulf menhaden landings of 567,000 t, and chances are four out of five that they will be between 439,000 and 696,000 t (Figure 5). We were encouraged by reports of large numbers of "small" gulf menhaden (presumably age-0s) in the coastal waters of western Louisiana and eastern Texas during early summer of last year. If valid, the 1998 year class of gulf menhaden could have a strong "showing" as age-1 fish in the 1999 fishery. On the other hand, if tropical storm activity in the Gulf of Mexico during 1999 is on par with that of summer 1998 (when "la Nina" conditions also prevailed), then our estimates of fishing effort and landings may be overly optimistic.

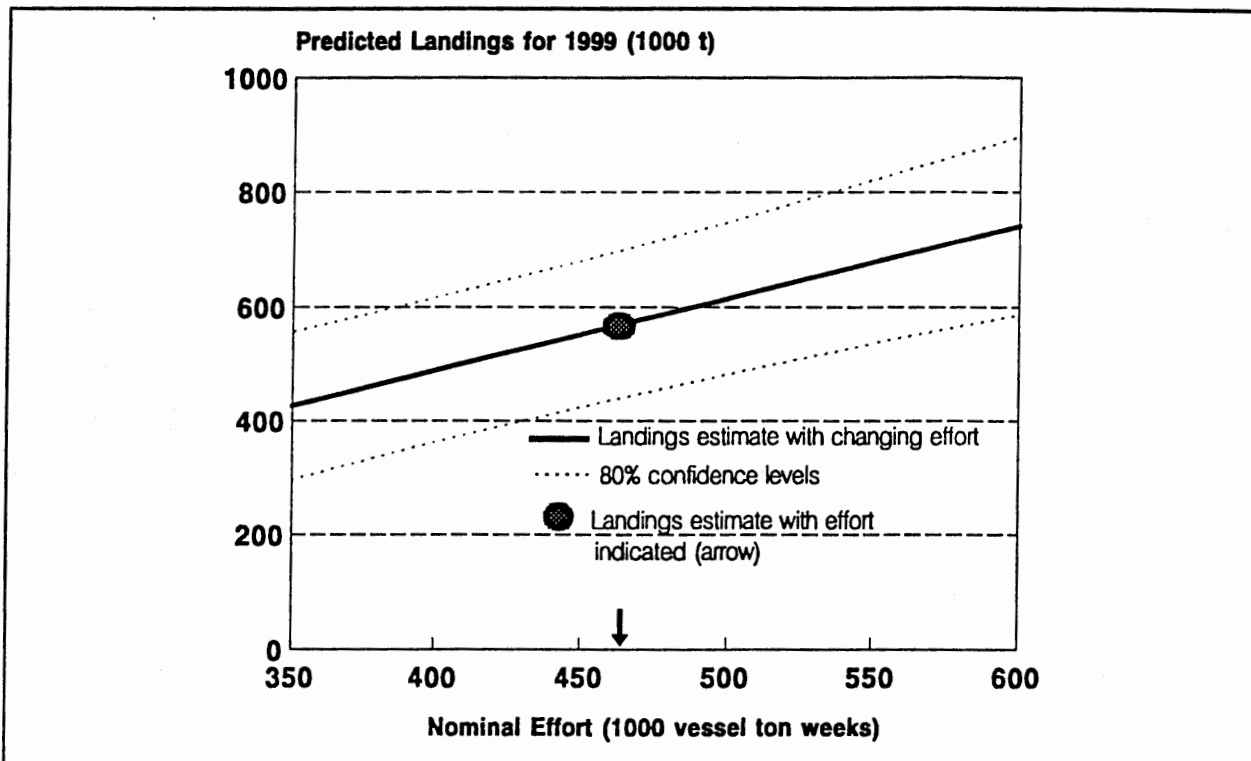


Figure 5 Forecast for the 1999 gulf menhaden fishery.

## ATLANTIC MENHADEN FISHERY

### Atlantic Menhaden Landings in 1998

Final catch information indicated that 1998 landings of Atlantic menhaden for reduction through February 1999 amounted to 245,920 t (809 million "standard" fish) (Figure 1). This was five percent less than purse-seine landings for the 1997 season (259,140 t), and 17 percent less than average landings for the previous five years (294,514 t) (Table 2).

During 1998 only two menhaden reduction plants operated on the Atlantic Coast, one in Reedville, VA, and one in Beaufort, NC. Recall that in November 1997, two menhaden companies in Virginia consolidated into one. Whereas in 1997 two Virginia factories fielded a fleet of 20 purse-seine vessels, during 1998 the remaining factory fished only 13 vessels. This represented a 35 percent reduction in the Virginia menhaden fleet. The menhaden plant at Beaufort, NC, fished two vessels during 1998 (although two small vessels unloaded minor amounts of menhaden during the fall fishery). Thus, only 15 vessels regularly unloaded Atlantic menhaden for reduction during 1998, seven less than in 1997.

Combined monthly landings through May and June 1998 (37,000 t) were considerably less than landings for equivalent time in 1997 (52,200 t) (Figure 6). Monthly landings during summer 1998 improved through July (28,700 t) and August (38,400 t), and peaked in September (40,700). Landings of fall migratory fish were very good during October (39,700 t) and November (36,400 t), but declined in December (19,900 t).

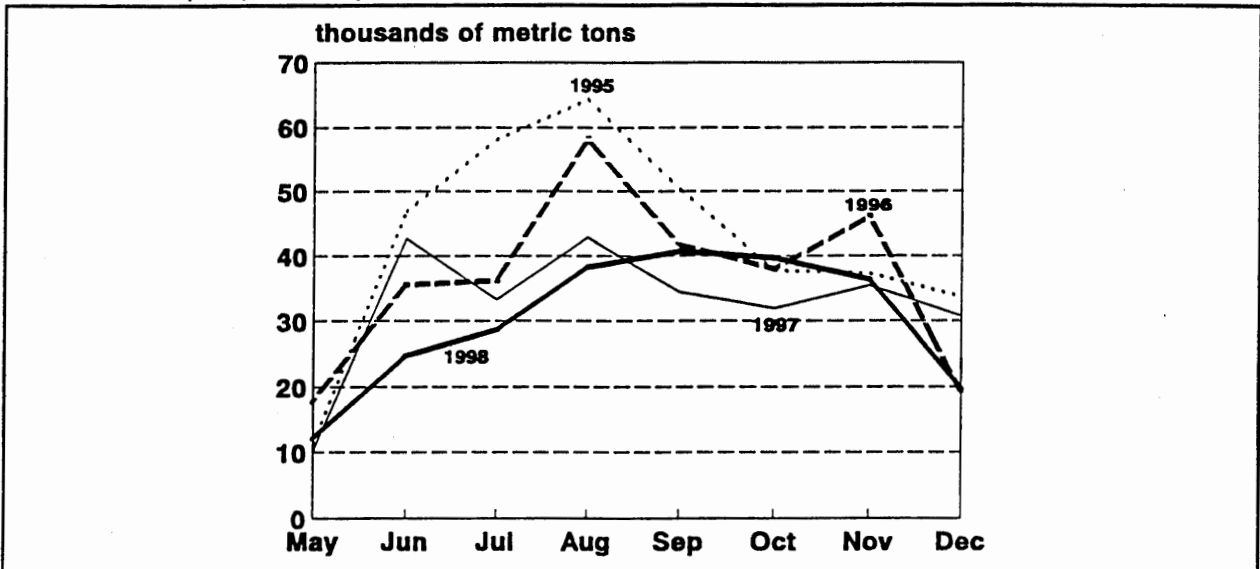


Figure 6 Atlantic menhaden landings by month, 1995-98.

Fishing in Chesapeake Bay commenced in mid-May, and catches were fair in the Bay through June. Unlike recent years, large numbers of Atlantic menhaden appeared off the northern North Carolina coast in mid-June, and good catches occurred from Ocracoke north to Virginia Beach during the latter half of the month. By late July catches improved in Chesapeake Bay, especially in the "Upper" Bay near Tangier Sound. Excellent catches of large, age-2 and -3 fish continued in the Bay proper through August and September. There were also good sightings of small, age-0 and -1 fish in the "Lower" Bay during the latter half of the summer. Virginia vessels made a few trips to the New Jersey coast in August, and again in mid-September. North Carolina vessels were

idle for a majority of the summer, but had fair catches of menhaden and thread herring in mid-September. Excellent catches of large fish continued in Chesapeake Bay through October, and along the northern and central North Carolina coast during late November. Fair weather during late November persisted through early December and vessels from Beaufort made excellent catches near Ocracoke and Hatteras. Windy conditions prevailed during mid-month, and Beaufort vessels were idle December 12<sup>th</sup> through 27<sup>th</sup>, while the Virginia factory had its final unloadings on December 10<sup>th</sup>. The Beaufort fleet had a few good catches in the Cape Lookout area during late December and early January, then "cut-out" for the season after January 11<sup>th</sup>.

**Age Composition of the Atlantic Menhaden Port Samples in 1998**

Almost 3,300 Atlantic menhaden were aged from the 1998 port samples (Figure 7). Age-2 (58%) Atlantic menhaden predominated in the coastwide port samples, followed by age-3 (15%) and age-1 (12%) fish. Age-4+ Atlantic menhaden comprised nine percent of the coastwide samples, while age-0's comprised six percent. Port samples from Chesapeake Bay in summer were similar to the coastwide age distributions with age-2 menhaden (63%) swamping all other ages classes. Age-2 fish also comprised a majority of the port samples from the Mid-Atlantic area (62%) and the South Atlantic (87%) in summer. Fall fishery samples were almost evenly distributed among age-1's (30%), age-2's (33%), and age-3+'s (35%).

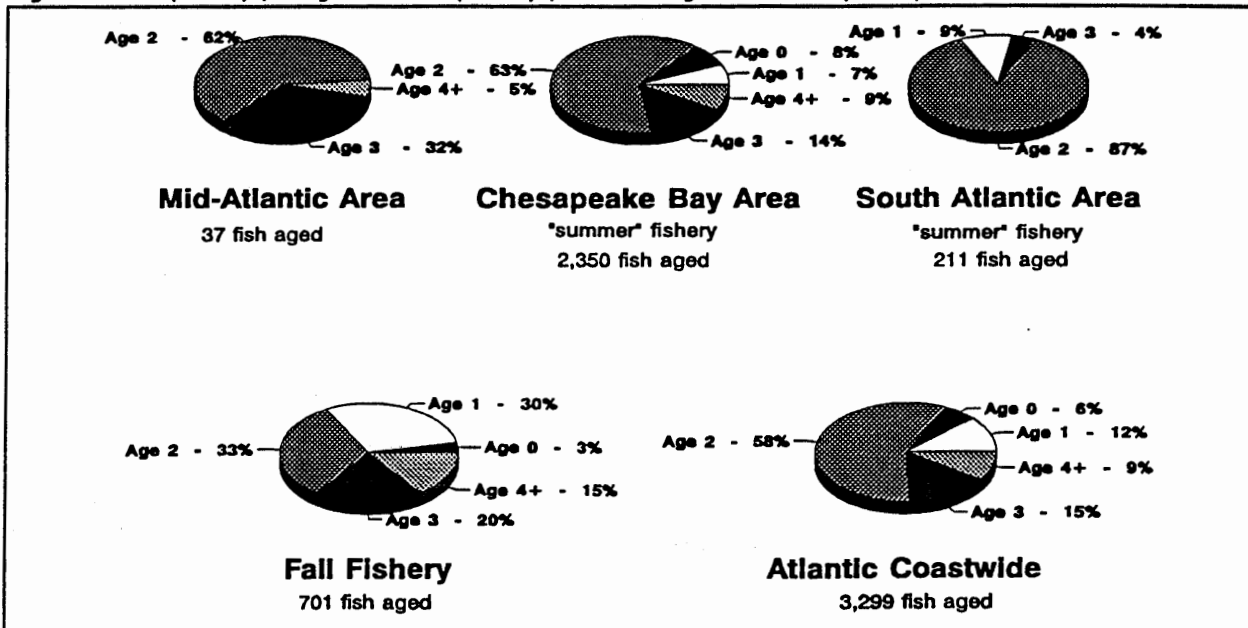


Figure 7 Age composition of Atlantic menhaden in the 1998 port samples.

Although few age-0 fish were harvested by the fishery in 1998, ancillary information, especially from southern New England, suggests that young-of-the-year Atlantic menhaden were abundant in the Mid-Atlantic area this past summer. Spotter pilots for the bait fishery reported large schools of small menhaden in Narragansett Bay during early September. These reports of 2-3 inch fish were confirmed by state biologists in Rhode Island. Similarly, popular sportfishing accounts reported large schools of "small bunkers" along the New Jersey coast during October and November. Young menhaden were periodically abundant in lower Chesapeake Bay during late summer (York River and Ocean View areas), although the reduction fishery primarily harvested older and larger fish in the "Upper" Bay. These accounts suggest the possibility of a relatively strong 1998 year class, which may appear in the 1999 fishery as age-1 fish.

**Fishing Effort in 1998 and Review of the 1998 Forecast**

A total of 15 full-time vessels offloaded Atlantic menhaden for reduction during 1998, seven less than in 1997. Accordingly, nominal or observed fishing effort in the Atlantic menhaden fishery for 1998 amounted to 437 vessel weeks, down 29 percent from 616 vessel weeks in 1997. In fact, 437 vessel weeks of observed fishing effort is the second lowest effort value recorded for the Atlantic menhaden fishery since the mid-1950's (Table 2). The least amount of observed fishing effort, 377 vessel weeks, occurred in 1986, a year when fish meal and fish oil prices were extremely low and only 10 vessels fished from one factory in Virginia.

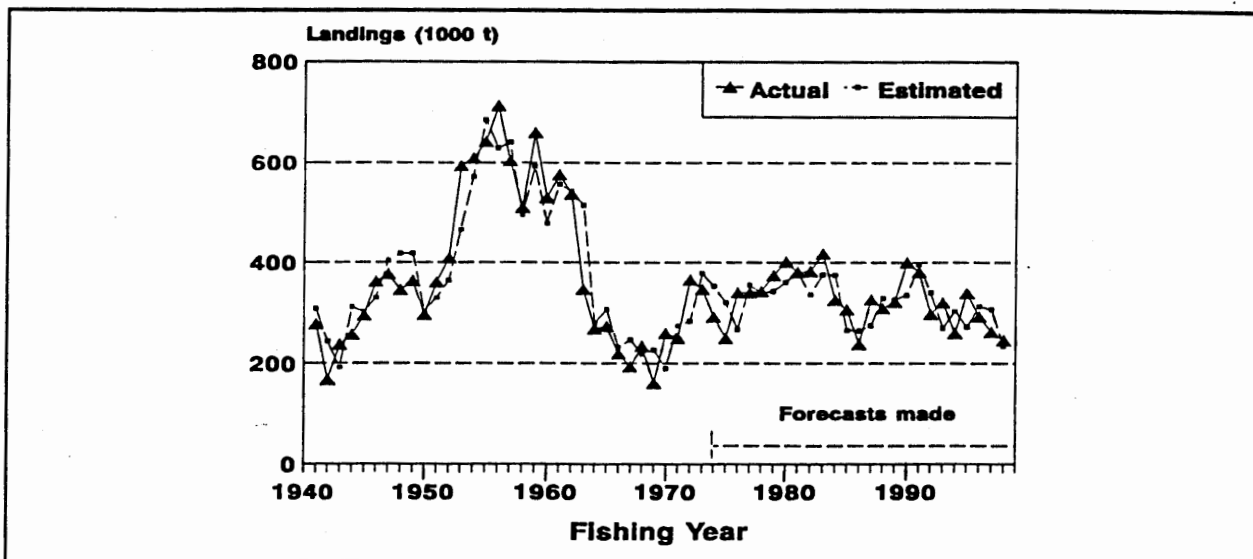


Figure 8 Atlantic menhaden purse-seine landings and forecasts, 1941-98.

Last March, our formal forecast predicted Atlantic menhaden in 1998 landings of 242,000 t based on an estimate of 460 vessel weeks of fishing effort. According to the historical (1940-97) relation of landings and effort for the Atlantic menhaden fishery (Figure 8), observed effort of 437 vessel weeks produced a post-season "hindcast" of 235,000 t with 80 percent confidence levels between 162,000 and 307,000 t. Actual landings of 245,920 t were five percent greater than those hindcast by our regression equation.

**Forecast of Atlantic Menhaden Landings in 1999**

As in 1998, we expect that in 1999 two menhaden factories will operate with a total of 15 vessels. Based on historical performance of these 15 vessels, we estimate that nominal fishing effort in 1999 will be about 430 vessel weeks. With 430 vessel weeks of effort, we predict purse-seine landings of 253,000 t in the 1999 Atlantic menhaden fishery (Figure 9) and chances are four out of five that they will be between 182,000 and 325,000 t.

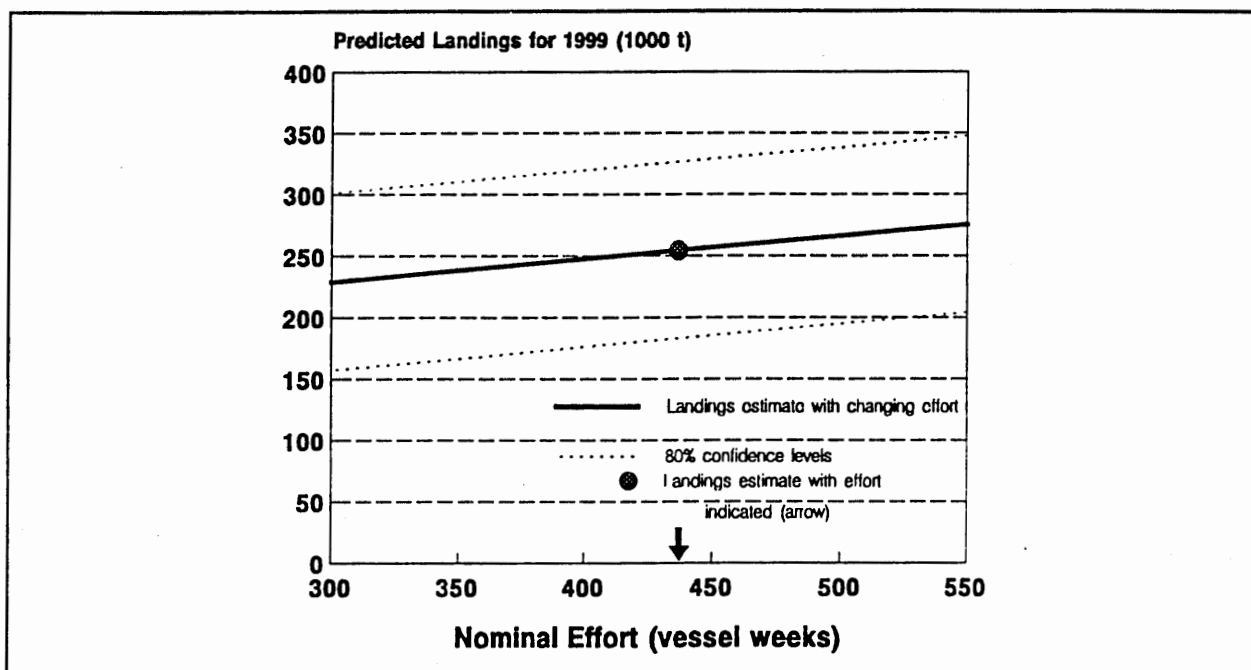


Figure 9 Forecast for the 1999 Atlantic menhaden fishery.

**COMBINED 1998 GULF AND ATLANTIC MENHADEN LANDINGS**

Combined landings of gulf and Atlantic menhaden purse-seine fisheries for reduction during the 1998 calendar year amounted to 1.60 billion pounds. Menhaden landings during the 1997 calendar year were slightly greater at 1.94 billion pounds. A comparison of menhaden landings to total U.S. domestic commercial fisheries landings for 1998 is not possible because the latter value is unavailable. Nevertheless, the contrast for the calendar years 1970-97 is shown in Figure 10.

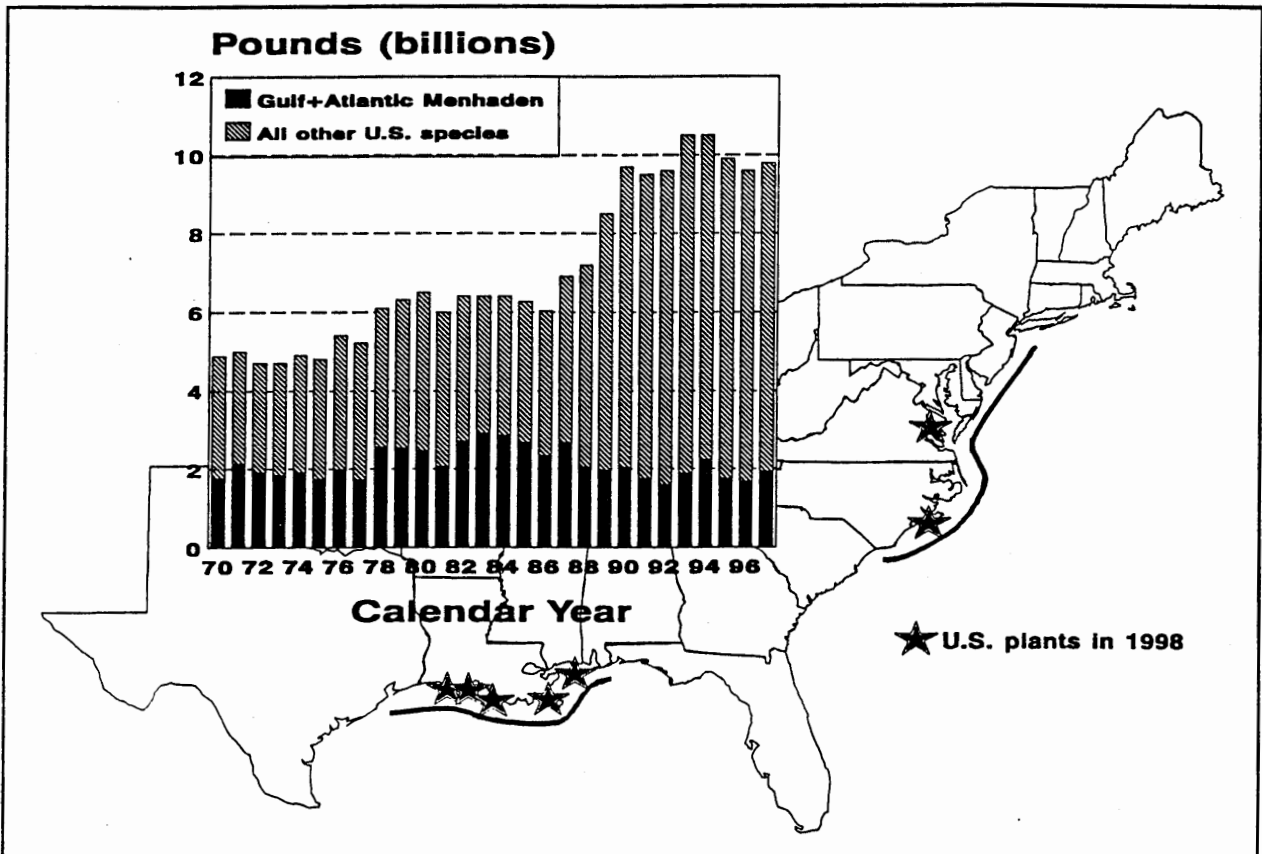


Figure 10 Gulf and Atlantic menhaden contributions to total U.S. commercial fisheries landings during the calendar year.

**Table 1** Fishing effort and landings in the gulf menhaden  
purse-seine fishery, 1955-98.

<b>Year</b>	<b>Fishing effort (1000 ves -ton-wks)</b>	<b>Landings (1000 metric t)</b>	<b>Year</b>	<b>Fishing effort (1000 ves -ton-wks)</b>	<b>Landings (1000 metric t)</b>
1955	122.9	213.3	1977	532.7	447.1
1956	155.1	244.0	1978	574.3	820.0
1957	155.2	159.3	1979	533.9	777.9
1958	202.8	196.2	1980	627.6	701.3
1959	205.8	325.9	1981	623.0	552.6
1960	211.7	376.8	1982	653.8	853.9
1961	241.6	455.9	1983	655.8	923.5
1962	289.0	479.0	1984	645.9	982.8
1963	277.3	437.5	1985	560.6	881.1
1964	272.9	407.8	1986	606.5	822.1
1965	335.6	461.2	1987	604.2	894.2
1966	381.3	357.6	1988	594.1	623.7
1967	404.7	316.1	1989	555.3	569.6
1968	382.8	371.9	1990	563.1	528.3
1969	411.0	521.5	1991	472.3	544.3
1970	400.0	545.9	1992	408.0	421.4
1971	472.9	728.5	1993	455.2	539.2
1972	447.5	501.9	1994	472.0	761.6
1973	426.2	486.4	1995	417.0	463.9
1974	485.5	587.4	1996	451.7	479.4
1975	538.0	542.6	1997	430.2	611.2
1976	575.8	561.2	1998	409.3	486.2



**Table 2** Fishing effort and landings in the Atlantic menhaden purse-seine fishery, 1955-98.

<b>Year</b>	<b>Fishing effort (ves-wks)</b>	<b>Landings (1000 metric t)</b>	<b>Year</b>	<b>Fishing effort (ves-wks)</b>	<b>Landings (1000 metric t)</b>
1955	2748	641.4	1977	1239	341.1
1956	2878	712.1	1978	1210	344.1
1957	2775	602.8	1979	1198	375.7
1958	2343	510.0	1980	1158	401.5
1959	2847	659.1	1981	1133	381.3
1960	2097	529.8	1982	948	382.4
1961	2371	575.9	1983	995	418.6
1962	2351	537.7	1984	892	326.3
1963	2331	346.9	1985	577	306.7
1964	1807	269.2	1986	377	238.0
1965	1805	273.4	1987	531	327.0
1966	1386	219.6	1988	604	309.3
1967	1316	193.5	1989	725	322.0
1968	1209	234.8	1990	826	401.2
1969	995	161.6	1991	926	381.4
1970	906	259.4	1992	794	297.6
1971	897	250.3	1993	626	320.6
1972	973	365.9	1994	573	260.0
1973	1099	346.9	1995	600	339.9
1974	1145	292.2	1996	528	292.9
1975	1218	250.2	1997	616	259.1
1976	1163	340.5	1998	437	245.9

**TECHNICAL COORDINATING COMMITTEE  
MINUTES**

**Wednesday, March 17, 1999  
New Orleans, Louisiana**

APPROVED BY:

  
COMMITTEE CHAIRMAN

10/21/99

Chairman Corky Perret called the meeting to order at 8:00 a.m. The following members and others were present:

**Members**

Doug Frugé, USFWS, Ocean Springs, MS  
Terry Cody, TPWD, Rockport, TX  
Tom McIlwain, NMFS, Pascagoula, MS  
Corky Perret, MDMR, Biloxi, MS  
John Roussel, LDWF, Baton Rouge, LA  
Tom Van Devender, MDMR, Biloxi, MS  
Alan Huff, FDEP, St. Petersburg, FL  
Steve Heath, ADCNR, Dauphin Island, AL  
Joseph Shepard, LDWF, Baton Rouge, LA

**Staff**

Jeff Rester, Habitat/SEAMAP Coordinator, Ocean Springs, MS  
Madeleine Travis, Staff Assistant, Ocean Springs, MS  
Larry Simpson, Executive Director, Ocean Springs, MS  
Ron Lukens, Assistant Director, Ocean Springs, MS  
Steve VanderKooy, IJF Coordinator, Ocean Springs, MS  
Gregg Bray, Survey Coordinator, Ocean Springs, MS  
Dave Donaldson, Data Program Manager, Ocean Springs, MS

**Others**

Bob Palmer, Tallahassee, FL  
Butch Pelligrin, NMFS, Pascagoula, MS  
Chris Dorsett, Gulf Restoration Network, New Orleans, LA  
Bob Zales, Panama City, FL  
Ed Conklin, FDEP, Tallahassee, FL  
Karen Mitchell, NMFS, Pascagoula, MS  
Harriet Perry, GCRL, Ocean Springs, MS  
Dale Shively, TPWD, Austin, TX  
George Sekul, Biloxi, MS  
Patricia Geets, National Fisheries Institute, Arlington, VA  
Kerwin Cueves, MDMR, Biloxi, MS  
Tut Warren, GCRL, Ocean Springs, MS  
Andy Kemmerer, NMFS, St. Petersburg, FL  
Richard Waller, GCRL, Ocean Springs, MS  
Scott Nichols, NMFS, Pascagoula, MS  
Joe O'Hop, FDEP, St. Petersburg, FL  
Cynthia Sarthou, Gulf Restoration Network, New Orleans, LA  
Mike Johnson, FDEP, Marathon, FL  
Bill Price, NMFS, Silver Spring, MD  
Mike Ray, TPWD, Austin, TX  
Bob Cooke, USFWS, Atlanta, GA

Vince Guillory, LDWF, Bourg, LA  
Joe Smith, NMFS, Beaufort, NC  
Vernon Minton, AMRD, Gulf Shores, AL  
Michael Bailey, NMFS, St. Petersburg, FL

### **Adoption of Agenda**

The agenda was adopted with the addition of a brief discussion on the standardization of inshore fishery sampling.

### **Approval of Minutes**

The minutes for the meeting held on October 14, 1998 in San Antonio, Texas were approved as written.

### **State/Federal Reports**

Florida - A. Huff stated that Florida voters approved the combining of the Game and Freshwater Fish Commission with the Marine Fisheries Commission last November. This would move approximately 300 employees to the new Fish and Wildlife Conservation Commission. The actual details of the new arrangement will be finalized after this summer's legislative session.

Alabama - S. Heath stated that a new artificial reef on the west side of Mobile Bay has been completed. The Department of Environmental Management has combined water quality sampling with the Department of Conservation and Natural Resource's assessment monitoring sampling. Artificial reef monitoring is continuing as well as the red snapper spawning stock enhancement. One project is now looking at red snapper otoliths to determine their estuary of origin. The ADCNR calendar was produced for the second time. The first calendar was well received. ADCNR is working with Bayou LaBatre to help commercial fishermen clean up debris in waterways off the coast. A new cooperative program with Auburn University and high school students in Mobile County has started a mariculture program at the high school level. The program is currently raising red snapper.

Mississippi - T. Van Devender reported that the red snapper season closed on October 23, 1998. The season reopened on January 1<sup>st</sup> and there have been reports of good catches of red snapper in Mississippi waters. Shrimpers were not required to pull TEDs from October to December of last year due to debris from Hurricane Georges. DMR is currently trying to establish a seagrass (*Ruppia*) preserve. Currently, there is a bill in the legislature that would bring law enforcement back into DMR. DMR has received one million dollars from the Bonnet Carré disaster relief money as well as \$150,000 from the red tide disaster relief. The Mississippi Creel Survey is in its eleventh year. DMR is continuing tagging projects and cobia and tripletail have been added to the project. DMR has received a proposal from GCRL to look at juvenile carangid use of *Sargassum*.

Louisiana - J. Shepard stated that there are now 77 artificial reefs in 26 locations off Louisiana. This is up 5 since last fall. Researchers are now performing side scan sonar surveys of artificial reefs to verify a hydroacoustic survey that was recently completed. Also, they are looking to determine effectiveness of platform layout on the bottom. Shrimp landings in 1998 were up twenty percent from the previous year. Seismic companies must now notify fishermen with maps and meetings before they start operations in a particular area. A cooperative program with the USGS displaying real time offshore buoy weather conditions is continuing. In 1999 the number of buoys will be increased to fifteen. LDWF has received one million dollars from the Bonnet Carré disaster relief money as well as \$300,000 from the red tide disaster relief. The trip ticket program began on January 1<sup>st</sup> and has been running smoothly.

Texas - T. Cody stated that Texas is in its 25<sup>th</sup> year of fishery independent sampling. Texas is also building a new 52 foot boat this year. The artificial reef program has three new structures. This brings the total to 33. TPWD is reviewing the shrimp management rules. They are talking to fishermen to design a shrimp management plan for each ecosystem area around the state. Studies this summer will compare BRDs in Matagorda Bay. TPWD has begun a commercial finfish limited entry program this year. The shrimp license buy back program is continuing and approximately 255 licenses have been bought to date. Red tide sampling is being conducted twice monthly. The shrimp virus monitoring is ending in August this year. TPWD is preparing a proposal to determine the amount of seagrass damaged by prop scarring. Local citizens are establishing aquatic preserves in some seagrass areas to try and preserve seagrass in heavily used areas.

NMFS - T. McIlwain stated that the proceedings from last year's shrimp virus workshop will soon be published. Red snapper stock enhancement is continuing with Mote Marine Lab and the Gulf Coast Research Lab. The mackerel stock assessment will be released at the end of March. Commercial red snapper fishermen caught two of the three million pound quota for the first half of the season during the first three weeks of February. The season opened February 1<sup>st</sup>. Rollie Schmitten will be leaving NMFS.

USFWS - D. Frugé stated that the Assistant Director for Fisheries will be moving to Anchorage, Alaska. His replacement has not been finalized yet. The Panama City Fisheries Resource Office continues its involvement in discussions with the State of Florida's Sturgeon Aquaculture Working Group regarding the draft "Implementation Plan for the Commercial Culture and Conservation of Native Sturgeon in Florida." The Panama City office is also continuing a project begun last year involving sonic tracking of Gulf Sturgeon in Choctawhatchee Bay and the nearshore Gulf. Work is also being done on determining sturgeon spawning areas in the Yellow River in Florida.

#### **Status of Freshwater Introductions**

J. Roussel gave an update on the status of freshwater introduction projects. He reported that the Carnarvon project is operational. The Davis Pond project is under construction and the status of the Bonnet Carré spillway project is still undecided.

#### **Update on the Red Drum Tag and Recapture Survey**

K. Mitchell of NMFS gave a presentation on the red drum tag and recapture project that was conducted in 1997 and 1998. During 1997, 9,569 fish were tagged east and west of the Mississippi River. During 1998, 9,550 fish were examined and 29 tags were recovered from east of the River with no tags being recovered west of the River. One hundred and eighteen tags were recovered from recreational anglers. The population estimate for red drum in the Gulf of Mexico is around 2 million fish. It was stated that this estimate is probably biased due to no tags being recovered from west of the River. The final report will be produced in the next two months.

#### **Blue Crab FMP**

The Blue Crab FMP was presented by V. Guillory, H. Perry, and B. Pellegrin. The FMP was recently completed and submitted to the TCC for approval. **Due to the TCC not having enough time to adequately review the FMP, a motion was passed to submit the FMP to the State/Federal Fishery Management Committee for their review and reserve the right to approve the FMP at a later date.**

### Flounder FMP

The Flounder FMP was presented by M. Johnson and again due to the TCC not having enough time to adequately review the FMP, **a motion was passed to table the FMP until the October meeting to allow the TCC time to review the FMP but also allow the FMP to be presented to the State/Federal Fishery Management Committee.**

### Spotted Seatrout

The Spotted Seatrout FMP was presented by T. Warren and due to the TCC not having enough time to adequately review the FMP, **a motion was passed to table the FMP until the October meeting to allow the TCC time to review the FMP but also allow the FMP to be presented to the State/Federal Fishery Management Committee.**

### Subcommittee Reports

Anadromous - D. Frugé stated that Florida is conducting several projects involving striped bass in a number of rivers, with the major area being the lower Apalachicola River. LDWF is conducting similar striped bass studies in the Tchefuncte River and is initiating a sonic tagging program on subadult Gulf sturgeon in Lake Ponchartrain to determine habitat use patterns. GCRL reported that last year's striped bass tagging project was very successful. Almost 1,000 tags were returned last year. TPWD stated that interbasin water transfers in Texas could negatively impact anadromous fish habitat. USFWS reported that contracts for funding the last year of the Fisheries Stewardship projects for the genetic analysis of Gulf striped bass have been initiated. USFWS reported they stocked over 1.8 million striped bass in Gulf rivers in 1998. FDEP provided an overview of the Florida Sturgeon Aquaculture Working Group as well as some of the group's recent activities. The Subcommittee also discussed a strategy for revising the striped bass FMP. Several Subcommittee members volunteered to review existing FMP sections with regard to changes and/or additional information that should be included in the revision. These revisions should be finished by October 1999. The only action item was the resolution that supported the USFWS's hatchery system that supports striped bass restoration in the Gulf of Mexico.

The TCC voted to approve the resolution (Attachment 1) with minor changes.

Crab - H. Perry reported the Subcommittee submitted several papers to Shellfish Research. The papers were accepted and will be published soon. The crab mortality symposium will be held in May in conjunction with the Crustacean Society meeting. The response to this symposium has been great. Three speakers have been invited and are scheduled to present at the mortality symposium. The Subcommittee will soon begin to work on a biological profile of the deep water crabs in the Gulf of Mexico for the Gulf of Mexico Fishery Management Council. The Subcommittee has recognized a problem in the blue crab fishery. There are currently too many fishermen and too many traps. The Subcommittee discussed the issue of limited entry. Several states in the Gulf area and the across the U.S. have or are considering some form of limited entry in the blue crab fishery. A meeting to discuss this issue could prove to be very valuable. The Subcommittee had a request to consider a general session on limited entry and a work group session to follow at the October 2000 joint meeting. The group requested \$5,000 to support speakers at the meeting. **A motion was made to approve the Crab Subcommittee's request for funding to support speakers and a limited entry general session. The TCC approved this motion.**

SEAMAP - D. Waller reported that the first red snapper real time mailing was produced and distributed in December with the response to the survey being positive. A meeting was held in December with members from the South Atlantic and Caribbean components at FMRI to discuss development of the SEAMAP data

distribution web page. The 1997 Atlas is at the editor's and should be published within the next month. Next, Dr. Jim Nance of NMFS presented a review of the 1998 shrimping season and the possible effects of no real time data distribution. Shrimpers reported that because the real time data were not distributed that on opening day, boats were not as clustered as in years past, although after two to three days, the boats were again clustered. The Galveston Lab did receive numerous calls asking for the real time data and why it was not being distributed. On this note, the Subcommittee decided to prepare a sample questionnaire to discuss shrimper's feelings on real time data distribution. The Subcommittee feels that only the Texas Shrimp Association is being heard and other shrimpers who use the data are being penalized. Since real time shrimp distribution was canceled this summer, the Subcommittee decided to produce red snapper summaries at the end of the summer and fall groundfish cruises. Next, B. Pellegrin presented his findings on the calibration comparisons between SEAMAP vessels. Pellegrin stated that no significant differences exist between the *Oregon II*, the *R/V Pelican*, the *Tommy Munro*, and the *A. E. Verrill*. S. Nichols stated that red snapper indexes from the different vessels will now be combined for the next red snapper stock assessment. D. Waller then reported on the development of a SEAMAP data web page. D. Waller has discussed this with personnel at USM and they seem interested in helping develop the web page for a minimal charge. In other business, Joanne Shultz reported that there will be no reef fish cruises this summer because there is not a ship available. Mark Leiby reported that Florida is looking to discontinue housing the SEAMAP Archiving Center because it does not pay for itself.

Data Management - J. Shepard reported that Louisiana has started its trip ticket program. The Subcommittee discussed future sources of funding for data collection in the Gulf of Mexico. The Subcommittee is pleased to finally see programs that were started years ago now starting to collect data. The Commission is now collecting MRFSS data and associated problems with collecting this data were discussed. The Subcommittee took a trip to LDWF in Baton Rouge to view the scanning system LDWF uses with their trip ticket program.

Artificial Reef - R. Lukens reported the Subcommittee met in October 1998 with the ASMFC to discuss mutual issues. Permitting of artificial reefs through the Corps of Engineers and the problems associated with this were discussed. There have been a number of conflicts associated with the COE permitting artificial reefs with the vast majority of these problems occurring in Florida. The artificial reef database is being revised. There are several reef sites that are listed more than once in the database and the duplicates are being deleted. The Subcommittee is compiling a literature database on artificial reefs. This database is available on the Internet at the GSMFC web site. A meeting will be held in June.

Habitat - D. Shively reported that the draft Commission Policy on Mariculture has been extensively reviewed by the Subcommittee and is presented to the TCC for its approval. During the process of developing this Policy, many members were concerned about the introduction of exotic diseases by processing facilities located in the U.S. Although this was not included in this policy, the Subcommittee will explore exotic diseases and processing facilities at the October meeting. **A motion was made to have the Habitat Subcommittee review the policy again and submit it for approval at the October meeting. This motion passed.** The Habitat Subcommittee discussed the Summary of Aquaculture Programs by State. **A motion was made to table the review of the Summary of Aquaculture Programs by State until the October meeting. This motion passed.** The Subcommittee then discussed the reprinting of the *Protecting Fish Habitat* brochure. Originally the brochure was going to be reprinted in connection with the Atlantic and Pacific States Marine Fisheries Commissions, but due to funding problems the Gulf's reprinting was delayed. With funding from Fish and Wildlife Service's Federal Aid program, the brochure will be reprinted within the next month. A new habitat poster was discussed and members from Texas reported that their graphic design artists could design the poster for no charge. The only charges would be for printing and distributing the posters. The Subcommittee then discussed the identification of irreplaceable habitat types in the Gulf of Mexico region. Many organizations have money to preserve key habitat areas in the Gulf of Mexico. The Subcommittee would like to identify areas that need preserving in each state and then try to work with

organizations to help partner money to acquire these areas. The Subcommittee will begin compiling an Essential Fish Habitat Annotated Bibliography looking at all fishing gear impacts in the Gulf of Mexico. Little research has been done in the Gulf of Mexico concerning fishing gear impacts and the Subcommittee feels that the research that has been done needs to be identified and areas for future research also need to be identified. The Subcommittee wanted approval to begin an annotated bibliography on fishing operations impacts on habitat in the Gulf of Mexico. **A motion was made to allow the Habitat Subcommittee to begin working on this annotated bibliography. This motion passed.** The last item on the agenda was the gathering of habitat brochures from each state. The Subcommittee sees a need to collect information from each state concerning habitat and one of the easiest ways to do this is from the collection of brochures produced by each state. This will be an ongoing process as each state develops new brochures.

The TCC made a request to display all action items or motions on the screen in the future.

### **Other Business**

Under other business, the TCC wanted to review the inshore fishery sampling in each state. The TCC charged Commission staff to review the monitoring activities in each state and report this at the next meeting.

**With no other business the meeting adjourned at 12:00.**



# GULF STATES MARINE FISHERIES COMMISSION

P.O. Box 726, Ocean Springs, MS 39566-0726  
(601) 875-5912 (FAX) 875-6604

## RESOLUTION

### ON THE NEED FOR A NATIONAL FISH HATCHERY SYSTEM

WHEREAS fish hatcheries <sup>can be</sup> are a valuable tool in comprehensive fisheries restoration/management programs, and

WHEREAS the U.S. Fish and Wildlife Service (USFWS) has a long history of successfully managing a series of fish hatcheries throughout the nation, and

WHEREAS the States in the Gulf of Mexico region have relied for many years on the USFWS fish hatcheries to supply hatchery reared striped bass in excess of those produced by state fish hatcheries, and

WHEREAS the Striped Bass Fishery Management Plan (FMP) of the Gulf States Marine Fisheries Commission (GSMFC) calls for continued stocking of hatchery-reared Gulf striped bass in concert with habitat improvement and other restoration and management actions, and

~~WHEREAS striped bass would probably disappear from most Gulf rivers without a stock enhancement program, and~~

WHEREAS the Memorandum of Understanding among the States of Alabama, Florida, and Georgia and the USFWS to restore striped bass in the Apalachicola-Chattahoochee-Flint River System and a Memorandum of Understanding between the Commission and the USFWS call for continued interagency cooperative stocking of hatchery-reared Gulf striped bass, and

WHEREAS the need for hatchery-reared Gulf striped bass, as called for in the FMP, exceeds the production capacity of state and federal fish hatcheries,

NOW THEREFORE BE IT RESOLVED that the GSMFC believes that fish hatcheries <sup>can be</sup> are an important tool in many fisheries restoration/management programs, and while hatchery stock enhancement can negatively impact wild stocks if not carefully executed, captive propagation can be applied effectively, given proper evaluation of hatchery stocked fish, to assist in restoring declining fish populations and managing fisheries which require supplementing natural reproduction.



RESOLUTION

Need for a National Fish Hatchery System

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BE IT FURTHER RESOLVED that the federal fish hatchery system, managed and maintained by the USFWS, plays a vital role in restoring and managing native stocks of striped bass in the Gulf of Mexico region.

BE IT FINALLY RESOLVED that the GSMFC supports increased federal funding of the fish hatchery system of the USFWS for such applications as interjurisdictional fisheries restoration and management, restoration of threatened and endangered species (such as Gulf sturgeon), management of fisheries programs on USFWS lands, and research to support fish hatchery practices.

*Given this the eighteenth day of March in the year of Our Lord, One Thousand, Nine Hundred, Ninety-nine.*

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George Sekul, Chairman  
Gulf States Marine Fisheries Commission

**LAW ENFORCEMENT COMMITTEE  
MINUTES  
Wednesday, March 17, 1999  
New Orleans, Louisiana**

APPROVED BY:  
JRW  
COMMITTEE CHAIRMAN

Chairman Jerry Waller called the meeting to order at 8:31 a.m. The following members and others were in attendance:

**Members**

Jerry Waller, *Chairman*, ADCNR/MRD, Dauphin Island, AL  
Terry Bakker, MDWFP, Biloxi, MS  
Bruce Buckson, FDEP/DLE, Tallahassee, FL  
Dennis Johnston, TPWD, Austin, TX  
Jeff Mayne, LDWF, Baton Rouge, LA  
Dave McKinney, NOAA/NMFS/OLE, St. Petersburg, FL (*Proxy for Gene Proulx*)  
John Sherlock, USCG, New Orleans, LA

**Staff**

Dave Donaldson, Data Program Manager, Ocean Springs, MS  
Tom Sminkey, Data Programmer/Analyst, Ocean Springs, MS  
Cindy Yocom, Staff Assistant, Ocean Springs, MS

**Others**

John T. Jenkins, ADCNR/MRD, Dauphin Island, AL

**Adoption of Agenda**

J. Waller noted that the NOAA Weather spokesman will not be present; however, fisheries radio bulletins will be discussed. By consensus, the LEC adopted the agenda as presented.

**Adoption of Minutes**

The minutes of the meeting held Wednesday, October 14, 1998, in San Antonio, Texas, were reviewed and approved as written.

**FIN Program Confidentiality Issues**

J. Waller reported that he and T. Bakker attended the ASMFC meeting to discuss and work on confidentiality protocols for the ACCSP. One statement may imply a restrictiveness to the data. Under Standards for Disclosure of or Access to Confidential Fishery Statistics, the second sentence of bullet two states, "If an independent investigation is corroborated by these records, it can then be released as evidence." This statement is ambiguous and subject to either narrow or broad interpretation. **J. Mayne moved that a letter be written to the ACCSP recommending the entire sentence be stricken from their policy. The motion passed by consensus.**

D. Donaldson noted that the Gulf considers law enforcement as just another authorized user; statements which imply conditions on their use of the data are not included in protocols. He seeks input from the LEC to develop a policy statement for inclusion in the FIN Program Design Document. This document will

provide guidance in outlining broad goals and setting up the structure of the program. **After reviewing similar policy from the ACCSP, the LEC developed and adopted the following statement:**

**The Enforcement Divisions within the FIN partners' agencies are charged with the management and protection of the marine resources under their respective jurisdictions. Effective implementation of the FIN will be contingent on industry's active participation and management and law enforcement responsiveness. The law enforcement community will enforce the implementation of the reporting requirements of the program through their enforcement of marine resource regulations. Consistent with funding allocation and mission prioritization, each enforcement entity will enforce the regulations to promote compliance with the FIN requirements.**

#### **Availability of Communications Systems for Issuance of Gulf States Marine Notices to Fishermen**

Two issues were discussed by the Committee. At the last Commission Business Session, a problem was addressed regarding fishermen off Louisiana having difficulty receiving NOAA Weather broadcasts where fisheries bulletins are currently announced. Unfortunately, no additional funding is available to increase transmissions. The only options available are for fishermen to adjust their radio frequencies according to transmitter location.

The LEC also continued discussions on a dedicated channel for the broadcast of fisheries information. NOAA Weather Radio was contacted and requested by the Commission to provide additional announcements on closures and regulation changes. J. Waller reported that both the Commission and he were contacted by a representative who explained that fisheries broadcasts are sent to them from the NMFS. D. McKinney volunteered to research the point of origin of the broadcasts and ascertain the proper procedure to adding items to those broadcasts.

In looking toward a long-term solution to awareness of fisheries information through public broadcasts, the LEC agreed the best possible scenario would be to have a dedicated channel to broadcast fisheries information. In addition to federal information, local, state, and regional information (season closures, openings, size limits, etc.) could be relayed. **J. Mayne moved to ask the Commission to pursue this initiative through a letter of support to the Coastal Congressional delegation. B. Buckson seconded and the motion passed.**

#### **Coastwatch Program**

With the exception of Mississippi, each Gulf state has a Coastwatch Program. D. Johnston reported that the program in Texas was initiated in an attempt to educate wardens on laws, changes to those laws, and the proper procedure to report offenses. The program was expanded to train interested individuals ("Coastwatchers") who could then report unlawful activities. When the program first began approximately 75% of the calls were sketchy; however, education given through the Coastwatch Program dropped that number to 10%. Unfortunately the program coordinator was promoted, left the coast, and the program is inactive.

J. Mayne reported that Louisiana trained 250 people who were subsequently given Coastwatch identification. When the program first began it garnered a lot of public support. The information reported was good; however, participation has dropped off and the calls documented from the Coastwatch Program have dropped drastically.

J.T. Jenkins reported that Alabama's program began last fall. The program is working especially well from a public relations standpoint and is a good enforcement tool. Some side benefits from the program are the relationships that have developed between enforcement officers and Coastwatchers, many of whom are CCA members. Manual changes and quarterly update letters are being sent out to keep Coastwatchers updated. Classes are also held throughout the year. Coastwatch calls go directly to the enforcement office in Dauphin Island. During off hours, the calls are routed via cell phones to the duty officer. An 800 number may help the program.

B. Buckson reported that Florida began their program in March 1995, and 700 people were trained. Follow-up is one of the biggest elements of a successful program, and in the last few months, program staff has attempted to revitalize the program. It is difficult to justify taking an officer out of the field to coordinate these type programs, and one solution may be to have a coastwatcher coordinate the program. He warned the Committee not to use the number of cases or calls to determine whether the program is successful. The program is an excellent public relations tool, and those benefits are not easily measured.

D. McKinney noted that these type programs could possibly use the 800 number that is currently being utilized by the NMFS for federal fisheries violations. Calls that are reporting other unlawful activities could be dispatched to the appropriate state agency.

### **U.S. Coast Guard Report**

J. Sherlock reported the Gulf had eight cutter days (210' cutters) in patrolling the Gulf of Mexico. There were 174 days of coastal patrol boats (82'-110'), 15 coastal search and rescues, and 3,500 resource hours from small boats (41'). In support of living marine resources, 427 sorties were flown with 790 resource hours in support of enforcing living marine resources. There were 1,000 boardings of commercial fishing vessels and 2,000 boardings of recreational vessels (safety and fishing checks). Two cases of illegal foreign vessels fishing in state waters were turned over to the TPWD. There were 774 TED checks with 21 violations—97% compliance. There were 422 BRD checks with 24 violations—95% compliance. Of particular concern were safety violations on commercial fishing vessels. Of 1,000 commercial vessels boarded, 424 were cited for safety violations—59% observed compliance. Last year 27 vessels were taken off the water for a year for these type violations. That number has already been exceeded this year.

**In response to the growing population along the Gulf Coast, the LEC agreed to ask the GSMFC office to play a more aggressive role in public outreach on commercial and recreational vessel safety regulations and safe boating practices. These outreach activities can be in conjunction with state enforcement officers and the USCG.**

### **NMFS Report**

D. McKinney reported that the NMFS Office of Enforcement has established an office in Austin where he will be acting ASAC of the southeast region. He will focus on enhancing federal/state enforcement efforts in the Gulf. He looks forward to working individually and collectively with enforcement officers in the region.

There is an international governmental movement toward the use of vessel monitoring systems (VMS) to oversee fisheries and shipping activities. In the European Union, all vessels 15 meters long are required to have a VMS. All Russian vessels are covered through VMS. Chile currently has 700 vessels with VMS and is working toward 100% coverage. Peru is also working toward 100% coverage. Mexico is investigating VMS possibilities.

The NMFS has researched vessel monitoring systems and has found that infrastructure is critical to the way information is processed and handled. Sensors are being developed to determine when engine rpms rise and if nets are dropped. Software is undergoing significant development, and costs are dropping. However, designs differ from region to region. A national system would be more effective and efficient and would be placed within the Department of Transportation. The NMFS has embarked on a goal to monitor 10,000 vessels; currently 2,500 are monitored.

### **State Reports**

Louisiana - J. Mayne noted that the state is having problems with corporation name changes. A business may be working under several different names. D. McKinney said the NMFS has investigated several situations like this. Many times, foreign interests are involved, and the situation can become very convoluted. Their agency is good at researching corporate trees and would be happy to assist.

Louisiana's trip ticket program began in January 1999. General reception has been good, and compliance is high; however, there have been some complaints regarding the length of time necessary to complete forms and the signatures required by both fishermen and dealers. Complaints may go to the legislature to change the forms and possibly do away with the program. **The LEC agreed to recommend to the Commission that a letter endorsing the program be written and sent to Louisiana's Senate and House Natural Resources Committee.**

Florida - B. Buckson reported that the state constitution was revised in November. The Florida Fish and Wildlife Conservation Commission was created and will merge enforcement and research divisions under one agency. The state legislature has the burden on how to accomplish this. A plan should be available in May.

Texas - D. Johnston reported the state legislature is currently in session. Limited entry legislation has been introduced for finfish. A package on contraband is also before the legislature. The state continues to work with PROFEPA which is dedicated to meeting on the Mexican/Texas problems. They are willing to prosecute significant illegal launch cases. A meeting is scheduled for April in Matamoros to discuss illegal launches and imports from Mexico.

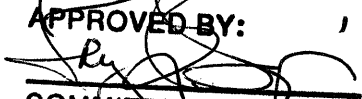
### **Other Business**

J. Waller inquired why NMFS deputy cards have still not been received for state officers. J. Mayne reported that G. Proulx said cards were at the print shop. D. McKinney found that while printing cards for the state of Florida several items had been excluded. The cards had to be reconfigured to allow state officers to enforce regulations pursuant to each state's memorandum of agreement.

**There being no further business, the meeting adjourned at 11:52 a.m.**

**STATE-FEDERAL FISHERIES MANAGEMENT COMMITTEE  
MINUTES**

**Wednesday, March 17, 1999  
New Orleans, Louisiana**

**APPROVED BY:**  
  
**COMMITTEE CHAIRMAN**

Chairman Larry Simpson called the meeting to order at 1:00 p.m. The following members and others were present:

**Members**

Ed Conklin, FDEP, Tallahassee, FL  
Doug Frugé, USFWS, Ocean Springs, MS  
Andy Kemmerer, NMFS, St. Petersburg, FL  
Vernon Minton, ADCNR/MRD, Gulf Shores, AL  
Corky Perret, MDMR, Biloxi, MS  
Mike Ray, TPWD, Austin, TX  
John Roussel, LDWF, Baton Rouge, LA  
Larry Simpson, GSMFC, Ocean Springs, MS

**Staff**

Larry B. Simpson, Executive Director, Ocean Springs, MS  
Ron Lukens, Assistant Director, Ocean Springs, MS  
Dave Donaldson, Data Program Manager, Ocean Springs, MS  
Jeff Rester, SEAMAP/Habitat Program Coordinator, Ocean Springs, MS  
Gregg Bray, Survey Coordinator, Ocean Springs, MS  
Tom Sminkey, Data Programmer/Analyst, Ocean Springs, MS  
Madeleine Travis, Staff Assistant, Ocean Springs, MS

**Others**

Michael Bailey, NMFS, St. Petersburg, FL  
Brad Brown, NMFS, Miami, FL  
Page Campbell, TPWD, Rockport, TX  
Kerwin Cuevas, MDMR, Biloxi, MS  
Chris Dorsett, GRN, New Orleans, LA  
Vince Guillory, LDWF, Bourg, LA  
Mark Holliday, NMFS, Silver Spring, MD  
Mike Johnson, FDEP, Marathon, FL  
Tom McIlwain, NMFS, Pascagoula, MS  
Karen Mitchell, NMFS, Pascagoula, MS  
Joe O'Hop, FDEP, St. Petersburg, FL  
Butch Pellegrin, NMFS, Pascagoula, MS  
Walter Penry, Daphne, AL  
Harriet Perry, GCRL, Ocean Springs, MS  
John Poffenberger, NMFS, Miami, FL  
Bill Price, NMFS, Silver Spring, MD  
George Sekul, Biloxi, MS  
Joe Shepard, LDWF, Baton Rouge, LA  
Tom VanDevender, MDMR, Biloxi, MS  
Borden Wallace, Daybrook Fisheries, Empire, LA  
James Warren, GCRL, Ocean Springs, MS  
Barney White, Omega Protein, Houston, TX  
Bob Zales II, Panama City, FL

### Adoption of Agenda

The agenda was adopted as presented.

### Approval of Minutes

The minutes of the meeting held on October 15, 1998 in San Antonio, Texas were approved as presented.

### Menhaden Advisory Committee Report

V. Guillory, Chairman of the Menhaden Advisory Committee reported that there are no action items to bring before the State-Federal Fisheries Management Committee (S-FFMC). Glen Thomas of the Louisiana Department of Wildlife and Fisheries (LDWF) gave an update on the coastal restoration efforts in Louisiana including an overview of Coast 2050 which is a planning program. Joe Smith of National Marine Fisheries Service (NMFS) reviewed the 1998 menhaden fishery and presented the annual forecast for the upcoming menhaden season. Guillory gave a forecast for the 1999 season using Louisiana data on juvenile menhaden and environmental factors. Plans are being made to begin the revision of the gulf menhaden fishery management plan (FMP). The stock assessment for the gulf menhaden fishery has recently been completed by Doug Vaughan of NMFS. Guillory indicated that the upcoming menhaden season should be better than last year, since last year the weather caused poor fishing conditions. **D. Frugé moved to accept the Menhaden Advisory Committee report. The motion was seconded and passed unanimously.**

### Commercial/Recreational Fisheries Advisory Panel Report

R. Lukens reported that the advisory panel is comprised of appointees made by the state directors, one from each state representing commercial interests and one from each state representing recreational interests. The commercial and recreational panels meet jointly for presentations and discussions, then later in the day may break out into separate panels to discuss subjects pertinent to their group. Finally in the afternoon they meet again in joint session for the opportunity to make any recommendations that may have arisen. Philip Horn of Mississippi is the Chairman of commercial panel and Pat Murray of Texas is the Chairman of the recreational panel.

This panel also serves as a citizens advisory panel for the Fisheries Information Network (FIN) and at this meeting of the advisory panel a presentation on the Commercial Fisheries Information Network (ComFIN) was given which included information on the trip ticket program. Copies of the FIN brochure were distributed and reviewed by panel members.

S. VanderKooy presented information on the three fishery management plans that are currently underway; blue crab, flounder and spotted seatrout. The advisory panel will be integrated into the fishery management planning process as it develops.

During the break out session, the recreational panel discussed limited entry in the recreational fishery. Each member of the recreational panel felt that their constituency would not understand nor would they support limited entry. Limited entry for the charter boat sector was also discussed, and there was some support for that.

The commercial panel discussed issues related to raw oyster processing. The commercial panel was presented with a proposal which has been submitted to the Food and Drug Administration (FDA) to consider new standards, and approval of a mandatory post-harvest treatment process to prevent or eliminate *Vibrio* in raw shellfish stock. This proposal was presented by the Center for Science in the Public Interest (CSPI). There

was concern on the part of the commercial advisory panel that this was an unnecessary action, since there are a number of safeguards in place, including monitoring programs, to assure that this product is handled properly. This information was then presented to the recreational panel and it was agreed by the joint panel to recommend to the S-FFMC that it take up this matter with the full Commission and request that a letter be written to the FDA opposing the proposal which would effectively eliminate any raw shellfish stock or market in the United States. The letter should acknowledge the existing safeguards already in place, education programs to identify at risk individuals, and the International Shellfish Sanitation Conference (ISSC) efforts, working in cooperation with the FDA, the states, and industry, on this issue. The Committee further discussed the various post-harvest treatment processes including radiation, a pasteurization process, and a water pressure treatment. All these processes would be very costly, if not prohibitive, for most seafood processors and the end result would be a product that is no longer alive. **C. Perret moved to take forward to the Commission, the Commercial/Recreational Fisheries Advisory Panel's recommendation to consider drafting a letter to the FDA opposing the CSPI proposal, and indicating existing educational programs, ISSC and state regulations, that would prevent *Vibrio* from becoming a serious problem. The motion was seconded and passed unanimously.** Staff will notify the Commercial/Recreational Fisheries Advisory Panel of the decision reached by the Commission on this issue.

C. Perret noted that the advisory panel requested that a presentation by experts in the field of marine sanctuaries/reserves be scheduled for the fall meeting. R. Lukens reported that NMFS law enforcement will have someone available to discuss enforcement issues at the next meeting. Mark Holliday noted that there is a National Academy of Sciences study underway on marine reserves.

**V. Minton moved to accept the Commercial/Recreational Fisheries Advisory Panel report. The motion was seconded and passed unanimously.**

#### **Status of Interjurisdictional Fishery Management Plans**

Chairman Simpson noted that the fishery management plans (FMP) being presented today are for review only at this time. S. VanderKooy reported that the review process will begin with the Technical Coordinating Committee (TCC). The blue crab is being reviewed at this time by the TCC, and the flounder and seatrout plans will be addressed by the TCC at the fall meeting. After receiving approval by the TCC, the plans will then be sent to the S-FFMC for approval.

H. Perry, V. Guillory, and B. Pellegrin gave a presentation on the revision of the blue crab FMP. H. Perry reported on the biological portion of the FMP. Perry reported that the blue crab Technical Task Force (TTF) has spent two years working on this FMP revision. Perry noted that managers should begin to put data collection programs in place so that ten years from now information will be available to evaluate this fishery. The task force also found that there is no standardized sampling program. Perry noted the importance of a standardized method of collecting data, and identification of essential habitat. V. Guillory was responsible for developing the fishery portion of the FMP and reported on landings over the last 15 years. The major problem in the fishery is that there are too many fishermen and too many traps. B. Pellegrin reported on the stock assessment done on the blue crab in the Gulf of Mexico. There were five basic indicators, landings, long term history and long term sustainable yield, estimates of relative abundance, length based estimates of fishing mortality and exploitation rates. Gulfwide the blue crab population appears to be in good health, particularly Louisiana, Alabama, and Florida. Pellegrin noted that the assessment was limited due to the lack of fishery dependent data. There was general discussion on ageing blue crabs and V. Guillory noted that there will be a presentation at a mortality symposium being held in May on a new biochemical technique to age crabs. H. Perry noted that predation is a significant factor and biotic processes are more important in survivorship than some environmental factors. Committee members discussed several findings with the members of the TTF.



Chairman Simpson noted that the TCC is reviewing the blue crab FMP revision for scientific soundness, and will come before this Committee (S-FFMC) with their approval of the FMP. Simpson suggested that members of the S-FFMC begin to concentrate on the management recommendations, and begin thinking about management options and initiatives. Simpson noted that any comments or thoughts on the plan may be directed to S. VanderKooy at the GSMFC.

S. VanderKooy reported that the TCC will be reviewing the flounder and seatrout FMPs. **In lieu of a presentation at this time, J. Roussel moved to defer the review of the flounder and seatrout FMPs until the October meeting. The motion was seconded and passed unanimously.**

#### **Amendment of FMP Process**

S. VanderKooy reviewed the FMP process noting that initially information on a particular species comes from the Data Management Subcommittee (DMS) and Stock Assessment Team (SAT) to the Commission. If it is determined that that species warrants a regional management plan be developed, a TTF is formed. The TTF is comprised of members from the Law Enforcement Committee (LEC), Habitat Subcommittee, SAT, DMS, a representative from each state, a sociologist, and an economist. A commercial member and a recreational member of the Commercial/Recreational Fisheries Advisory Panel (CRFAP) can also be on the TTF and provide input to the CRFAP and ultimately to the S-FFMC. VanderKooy noted that the Chairman of the TCC gave approval to submit the crab and flounder plans to the CRFAP to provide input to the S-FFMC. L. Simpson noted that only after the S-FFMC has approved a plan for outside review, will it go to the lay public for comment.

#### **Status and Direction of Gulf of Mexico Data Program**

R. Lukens opened the discussion on the status and direction of the Gulf of Mexico data program by stating that the discussion was prompted by the fact that funding had been appropriated for this purpose and all partners should be involved in decisions regarding expenditure of this funding. A list of suggested items was distributed to Committee and panel members (Attachment 1). The items on this list are consistent with the planning and prioritization documents for the Southeast Recreational Fisheries Information Network [RecFIN(SE)] and the Commercial Fisheries Information Network (ComFIN). Lukens explained that the Fisheries Information Network (FIN) will be meeting in April and this matter will be discussed further at that time.

Lukens indicated that 2.2 million of the total is for the Marine Recreational Fisheries Statistics Survey (MRFSS). An estimated \$500,000 is earmarked for National Marine Fisheries Service (NMFS) data activities, which include the phone survey, tax, salaries, and central office. The red drum project comes off the top of the 3.9 million, that figure is then divided by three. The phone survey comes out of our one-third, plus taxes. Lukens stated that we do not know what the ultimate number will be, but probably in the vicinity of 800,000 to one million from the Recreational Fish Harvest Monitoring line item, in addition to the GulfFIN line item.

D. Donaldson explained the process for RecFIN and ComFIN, whereby both Committees went through brainstorming sessions to identify issues and problems, develop recommendations, and prioritize those recommendations. Work groups further developed these recommendations, and identified associated tasks, which were then approved by the RecFIN and ComFIN Committees. The resulting list of suggestions for funding consists of several types of activities (Attachment 2).

Chairman Simpson requested that all members of the S-FFMC and invited guests make any comments or suggestions concerning the direction of the data program in the Gulf of Mexico.

Brown stated his excitement about the funding and direction of the program, indicating that he had been in on the ground floor of proposing that the states and NMFS move toward a ComFIN/RecFIN approach to have an integrated state-federal statistics effort in the southeast. He had some specific concerns on how to make some of these transitions effectively without causing some losses in the meantime, indicating that he would identify those later. He stated that the current status of the program with the funding now available represents the shared vision of a more integrated approach with leadership in the Gulf states coming to fruition.

Simpson agreed, indicating that such a data program must be a state-federal partnership, because the states and the federal government both have authority and responsibility to collect and manage data for fisheries management purposes.

Lukens stated that the state representatives, and in the case of NMFS, John Poffenberger, were in attendance because of their constant involvement in the program, in case questions arose of a nature that they would be more appropriate to respond.

A discussion of the available funding ensued, with a general agreement that there was approximately 1.6 million yet to be obligated.

Perret asked a question regarding the reason for the proposed project on the east coast of Florida which is not the Gulf of Mexico.

Simpson responded that the GSMFC has agreed to administer and coordinate recreational surveys for both the Atlantic and Gulf coasts of Florida in order to keep from splitting the state. In that regard, the Atlantic Coast Cooperative Statistics Program has agreed to administer and coordinate the east and west coasts of Florida for the commercial data program.

Perret then asked for estimated funding levels associated with the listed projects. Donaldson provided those figures.

Donaldson indicated that the compilation of the charter boat frames for Texas and the Florida east coast would probably be a total of about 50K. The next project was the hardware and software requirements for the GSMFC office, which would total about 300K. Next was the Louisiana data management prototype, which was listed at about 50 or 60K. The trip ticket program work in Texas was about 750K, and Mississippi and Alabama trip ticket activities were 250K each. Those projects totaled about \$1.56 million. Donaldson stressed that the costs outlined were in preparation for full implementation of the associated data collection and data management activities. For instance, the charter boat frame development projects will prepare the states to conduct an enhanced charter boat survey in their state. The hardware/software project for the GSMFC will prepare that office to conduct the necessary data management activities. The trip ticket program activities will prepare the states to implement trip tickets. The costs identified may be multi-year costs, but do not reflect costs levels for ongoing activities.

Holliday asked how the items on the list were chosen among all the different RecFIN/ComFIN issues instead of other items that are available. In other words, what process was used to identify what is important to GulfFIN, what should go first, what should go second, etcetera. All of the items identified by the FIN are important, but why these versus others? Regardless of how much money there is, there are certain things we want to accomplish first. Some things this year, some things next year. This is a long term proposition.

Lukens responded, indicating that there were some things which seemed basic or fundamental which need to be addressed first, such as the trip ticket program. These programs would then become the framework for

the catch/effort data over time. There are infrastructural issues, such as one-time or up-front equipment costs. The charter boat sample frame projects were selected because they are manageable and compliment an initiative that is already underway. The charter boat sector of the recreational fishery is under scrutiny currently, and there seemed to be a good logic behind completing the circle with the charter boat pilot project. Lukens indicated that at some point there needs to be a second tier list. The primary reason for the selected items was to provide suggestions to get the ball rolling. They are foundation activities that will provide the bedrock for continued program development.

Donaldson pointed out that each of the items has an associated prioritization that the FIN Committee developed, and have all been identified as high priority items to be addressed as soon as possible. That is something else the Committee did.

Minton asked for a further explanation about equipment and multi-year costs associated with the trip ticket activities.

Donaldson explained that the projects will be slated to begin this year (1999), but may not necessarily be completed by December 31, which he described as multi-year costs. Further, in order to meet the needs of a trip ticket program, states will need to purchase new computer and communications equipment.

Minton then asked about ongoing costs for program support, how much and from what source. Donaldson responded, indicating that for Alabama ongoing costs have been estimated between \$150K to \$200K. He further indicated that the assembled group needed to discuss the source of continued funding.

Minton asked how this current initiative would affect the cooperative statistics funding, currently around \$80K. He was concerned about losing that funding and then not having a source of continued funding. Perret concurred with Minton's line of reasoning. He asked Shepard how much it cost for Louisiana's first year of trip ticket development. Shepard answered about \$500K.

Roussel indicated that we need look at the long term stream of revenue needed to fund the activities. Also, it is important to engage NMFS in the discussion because the vision of where we are headed, for example in Louisiana trip tickets, will affect NMFS' programs. He further stated that if the Louisiana trip ticket program stays in place, NMFS' presence in collecting commercial landings data won't go away, but will be adjusted to compliment the program rather than basically duplicate current activities. There was general agreement with Roussel's comments.

Brown agreed that the states and NMFS should work together so that the division of labor can be worked out such that the financial resources currently available to NMFS can be directed toward concentrating staff in the field for biological sampling, continue log book coverage, and continue quota activities for the Council. Kemmerer agreed with Brown's comments, expressing that the group not lose sight of the need for continued biological sampling.

Kemmerer expressed his concern that there needs to be a system to identify the boats that are fishing. Will a trip ticket system be incorporating this aspect of fisheries data. Lukens responded that the system is designed to provide unique identifiers to both the vessels and fishermen so they can be tracked. That should provide a universe. Lukens then responded to Kemmerer's concern regarding biological sampling, indicating that biological sampling is another module within ComFIN and is a very high priority. While current biological sampling will continue, enhancements are not proposed this year using 1999 dollars.

Regarding the issue of a vessel universe, Roussel added that if each state is participating in the trip ticket system, that will constitute a vessel identification system. It will provide records of which vessels landed

shrimp or other species in the Gulf of Mexico, and collectively those trip ticket systems can identify every vessel and their landed product Gulf wide.

Poffenberger disagreed with the thought that the trip ticket systems would provide a universe. He indicated that there are approximately 25 to 30% of the people that hold permits that do not fish. If they are not fishing, they cannot be counted in the universe. He indicated that there needs to be a license or permit system that identifies vessels and fishermen.

M. Holliday indicated that Roussel's comment is true if you assume the vessel can be tracked across states. For example, can a vessel that reports in the Louisiana trip ticket system be identified if it fishes and reports in the Florida trip ticket system? There should be some way, in the program design, to harmonized trip ticket systems across the various states. One of the ways to do that is to establish some agreed upon way to identify craft across the different trip ticket systems. Holliday continued his desire to have described the process by which items were identified. For example, why is biological data collection being put off till another year in favor of trip ticket systems. He indicated a need for a long term spending plan that goes beyond the transition issues.

Donaldson indicated that there has not been a formalized process to identify specific items for funding because we are now in a different phase, an operational phase. The FIN has been planning for a number of years but now has operational money. This is the beginning of the development of this process. We are going to talk about it at the FIN Committee meeting and formalize a process so we can do that. There has been an underlying agreement by the FIN Committee that catch/effort has a high priority and that is why the items that you see here have been identified as they are.

Brown indicated that they have some experience with division of labor. For example, in Florida NMFS does some biological sampling and the state does some. NMFS tends to be responsive to Council managed species, and it is useful for them to be federal employees because of the ability to respond very quickly to shifts in Council demands as opposed to something that was made in a cooperative agreement at the beginning of the year. He stated that one of the difficulties and criticisms of biological sampling, as those who took part in the red snapper review realize, is the fact that it tends to be more haphazard than random in statistical design. The reason for that is the number one responsibility of the port agent is to get the total catch figure. Their sampling is built around getting total catch. If in fact the total catch is being supplied through a trip ticket system, there is now the capability of devising a statistically designed system to collect biological data, because it becomes their primary responsibility rather than getting total catch. He continued his concern for not having any biological sampling on the list, indicating that NMFS was criticized for having a low level of shrimp interviews and a low level sampling in the reef fish fishery. Last summer extra money was made available to address that issue. People were hired, and the level of sampling was brought up. If funding to continue that activity is not identified soon, those people will be laid off. If there is some way to fund them in the transition period, that level of sampling can be maintained.

Simpson stressed that the funding being discussed is new funding, and that existing sampling isn't going away. However, Brown responded that the enhanced dock sampling will go away next year without new funding.

Minton asked which states have legislation to allow implementation of a trip ticket system? The general response was that each state has the authority to implement a trip ticket program.

Minton indicated that Alabama's legislation provides the authority to implement a trip ticket system when it is implemented in the Gulf. He stressed that as long as the proposed items go forward, Alabama can participate.

There ensued a discussion regarding trip tickets versus biological sampling. There was general agreement that trip tickets should focus on getting catch and effort, primarily, and that resources made available as a result of trip ticket programs should be directed toward increasing biological sampling. It was again stressed that because the current discussion is focused on trip ticket programs, biological sampling currently underway would not be curtailed, with the exception of the issue raised by Brown.

Conklin raised an issue, indicating that the Florida Marine Fisheries Commission prevailed upon Florida DEP to use the trip ticket information as a means of monitoring quotas, which it was never designed to do. He cautioned that that is a bad direction for trip ticket programs to go. It has caused problems because the program does not have the quick response necessary for quota management. However, it was the only universal system that was available. Because there is not a universal set of port samplers, for example, telephone sampling of large processors had to be used to aid in the process of determining quotas that have been set. The issue caused problems politically. Florida DEP told the Florida Marine Fisheries Commission that the trip ticket program was not a quota monitoring system, and they required the data anyway.

O'Hop added that the trip ticket program helps document participation in fisheries, provides data for trip characteristics, and can be used for a range of other types of analyses. Conklin added that it has been used in law enforcement. Further, he indicated that trip ticket questions need to be continually crafted to make sure that the answers to the questions are the kinds of information that is being sought.

Roussel stressed that one of the main purposes for the Louisiana trip ticket program was to create a mechanism to define the universe that was necessary to answer specific questions. It was not intended to be an end all in terms of providing all the data needed. This would allow for statistically based biological and other dockside sampling. Shepard added that landings, area, gear, gives you the universe to be able to statistically sample. That leads to what Holliday was discussing, ie. why don't we just go dump money into sampling. We need the trip ticket program so that we can go out there and statistically sample and not just throw money into collecting a bunch of fish. That's why the basic program infrastructure should be developed before changing or enhancing biological and dockside sampling.

Conklin added that there has been an iterative process, over a long period of time involving several committees within Gulf States and the staff, to come up with what amounted to a collective wisdom of what the priorities are for the system. He indicated that the list of items presented is essentially the short list that resulted from that process. To a certain extent it was subjective, and to a certain extent it was based upon analysis by key staff and key managers from every state having been involved in this process.

Kemmerer continued to express his concern regarding biological data. NMFS provides funds to the states for a cooperative statistics program for collection of data. Is the proposed program going to replace a portion of that, all of it, none of it? He stressed the need to determine the impact on current activities by implementing the trip ticket programs in each state. He stated that keeping the issues very narrow is wrong.

Kemmerer asked whether head boats are part of the pilot charter boat survey which is ongoing. The response to the question was no, and Kemmerer asked why they aren't picked up in that survey.

Lukens responded that that question will be discussed at the upcoming FIN meeting. He indicated that the current head boat survey is a log book program. There is a real interest in seeing that program addressed in the same fashion as the pilot survey, rather than continuing to fund the log book program.

Kemmerer noted that it has been tough to fund, and that it is getting tougher and tougher every year. He expressed his desire to see the head boat program picked up as a part of the FIN. He added that the

menhaden sampling program should be included. There was general agreement about including the menhaden sampling activities.

M. Holliday indicated that the discussion sounds like there is a concern about what the transition plan looks like. He interpreted that there is a design to purposely overlap activities for awhile. Further, he added that he believed that some of the participants of the meeting were having a hard time conceptualizing how to lay out the next steps. He stated that he would like to see all the issues laid out and see when funds could then be freed up to redirect to the next highest priority, whether it's observers, biological sampling, etcetera. Lukens responded that such an exercise would partially begin with the upcoming FIN meeting.

Ray again raised the issue of the source of funding of the trip ticket programs beyond the 1999 funding. Simpson indicated that the program is permanent and ongoing. The funding is not one time funding. He pointed to the fact that Congress established a new line item for the funds as evidence that there is the intent to continue funding.

Roussel attempted to clarify the issue of long term funding. He asked if the federal dollars will be available to continue funding the state trip ticket programs beyond 1999, or would the states be expected to provide the funding long term? Simpson responded that he felt that operational costs could possibly be handled in the long term by the federal dollars.

Regarding the process Holliday stated that the FIN Committees have worked diligently to design what the program should look like, but what is lacking is the middle part. He felt that everybody around the table knows what is currently going on, but the tough question is how to get from the current status to the planned program.

Regarding long term funding, Roussel stated that he believes that the state is going to have to commit it's own revenue stream to operate and run the program. That is what Louisiana ultimately had to do. It does two things. First, it produces the money through license revenues, which we all know is important. Second, it shows that there is a commitment on the part of the state, from the legislative branch, there was enough interest to support the program. He stressed that having the political support to make those programs work is vital.

Minton reiterated his concern about the fate of the Cooperative Statistics money, saying that if that goes away and then a few years down the line the *GulfFIN* funding is discontinued, we don't have anything.

O'Hop indicated that the Florida trip ticket program has been in place since October 1984. The Cooperative Statistics money has been in existence since about 1985 or 86. In Florida the Cooperative Statistics money has been used to collect biological data. He expects that that arrangement will continue, since it has been in existence since the inception of their program.

Conklin stressed that reliance on license revenues can be difficult over the long term, because public support can diminish and cause a shortfall in funding to support the program. He indicated that the gill net ban in Florida affected commercial license revenues and has caused program funding to be reduced.

Penry asked Minton what kind of legislation he was anticipating for the Alabama trip ticket. Minton indicated that the current legislation provides enough authority as long as all the Gulf States go in that direction.

Conklin pointed out that there is a need to have some method of doing audits, or to validate dealer reporting on the ticket by checking their books. There needs to be some way to go into the fish house after the fact and

check the records to validate the records that the fish houses provide to the state. Additionally, the program has to be structured to deal with confidentiality of the data.

Lukens indicated that, since Texas had decided not to go forward with trip ticket development, there should be \$600,000 left do some other activities than what was on the initial list. He added that the Commission office would have to develop a cooperative agreement document soon after the meeting in order to get a July 1<sup>st</sup> start date for the new activities.

There ensued a discussion regarding timing of actions following the meeting. It was pointed out that the FIN Committee was scheduled to meet the following month and would discuss the results of the current meeting plus providing a prioritization of items. There was also discussion regarding agreement about the funding levels. It was pointed out that the budgets developed by the states and the Commission would provide a better estimate of how much each activity will cost. It was not realistic to arrive at those numbers at the current meeting.

Holliday asked if there was an expectation of consensus that the estimated costs are the right dollar amounts for the projects discussed. Lukens responded no, reiterating that consensus on the project costs would come after development of the cooperative agreement and budgets.

Simpson asked as a starting point if any of the participants disagree with the ideas that were put forth for funding. Brown indicated that he had no problem with the items that were put forth, and agreed with the priority being given to the trip ticket system. He reiterated, however, that he would like consideration of funding the head boat project and the port samplers for interviews and biological sampling for the year 2000. There was general discussion regarding those issues.

Conklin introduced a request to update Florida's existing program in order to modernize the system that they have had in place for many years. The project would allow Florida to convert to modern software and hardware. The total dollar amount would be \$150,000.

Simpson asked how much the head boat project would cost. Donaldson indicated that it would be approximately \$60K for the Gulf part. It was pointed out that the menhaden sampling would cost about \$40K, and the enhanced port sampling would be about \$150K.

Kemmerer requested that the FIN Committee undertake integration of existing cooperative statistics program with new trip ticket systems with emphasis on redirecting for biological sampling. Lukens and Donaldson indicated that they would make that recommendation at the upcoming FIN meeting. It was pointed out that that activity would be accomplished under the administrative portion of the program and would not require funding from the amount under discussion.

Simpson asked the pleasure of the participants in the meeting. Conklin asked if a motion was needed. Simpson indicated that a motion was not necessary, but direction was needed.

Conklin indicated that he supported the list as amended.

Kemmerer requested a planning exercise to deal with the quota monitoring issue which Conklin introduced earlier. Lukens and Donaldson indicated that they would add the issue to the FIN agenda as a recommendation.

Regarding funding of the head boat project, Lukens pointed out that there is an interest in changing that methodology to incorporate it into the charter boat survey. There was general agreement that that possibility

should be explored. Donaldson indicated that if such a recommendation goes forward, a study should be conducted, like the pilot charter boat study, to compare methodologies and determine the best method to employ.

Chairman Simpson summarized the discussion saying that he feels that there was consensus on the list that was provided and as amended. He added that detailed budgets, developed in conjunction with the cooperative agreement, will provide more precise cost estimates. He added that the FIN Committee would receive a recommendation to develop a plan to integrate existing cooperative agreements with the trip ticket system, with emphasis on how that would affect biological sampling. To that recommendation would be added the need to address the quota monitoring issues related to trip tickets. Finally, he indicated that the participants of the meeting would be getting input from the FIN Committee based on their discussions in the first week in April.

Holliday asked what the next steps would be. **Roussel responded, offering the following motion: That the State-Federal Committee hold another meeting following that April FIN meeting. Kemmerer seconded the motion, which PASSED UNANIMOUSLY.** It was agreed to allow staff to set up the next meeting, which would take place soon after the FIN meeting. It was also agreed that the participants in the current meeting should attend the follow-up meeting.

**Finalization of Summer State Directors' Meeting**

L. Simpson reported that State Director's meeting will be Saturday, May 22 through Wednesday, May 26, 1999. Saturday will be travel to Brownsville, Texas and Sunday will be travel to Tampico, Mexico. Included will be a visit to a turtle research facility with Dr. Birchfield, with a return to Brownsville on Tuesday night.

A generator will be purchased and donated to this Mexican research facility. More details will be forthcoming.

**There being no further business, the meeting was adjourned at 5:15 pm.**



Attachment 1

**SUGGESTIONS FOR FUNDING CONSIDERATION IN 1999**

Compile charter boat vessel frame for Texas

Compile charter boat vessel frame for east coast of Florida

Develop commercial data management system (hardware, software, etc.) for the GSMFC

Development of the ComFIN data management prototype for Louisiana including development of a metadata module for the system

Initiate the development of a trip ticket program for Texas

Initiate the development of a trip ticket program for Mississippi

Initiate the development of a trip ticket program for Alabama

# Description of Recommendations Process

## **Brainstorming sessions**

- identification of issues**
- development of recommendations**
- prioritization of recommendations**

## **Task Work Group**

- further develop recommendations with related tasks**

**Approval of RecFIN/  
ComFIN Committees**

# **For-Hire Activities**

- **RecFIN Recommendation 13: Implement appropriate survey methodologies to monitor charter and head boat fisheries**
  - **Compile charter boat vessel frame for Texas and east coast of Florida**

# **Commercial Catch/Effort Data Collection Activities**

- **ComFIN Recommendation 3: Evaluate the best methods for collecting catch and effort data for commercial fisheries**
  - **Initiate development of trip ticket programs for Texas, Mississippi, and Alabama**

# **Data Management Activities**

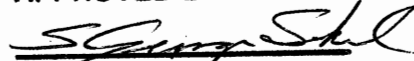
- **ComFIN Recommendation 6: Establish and maintain a marine commercial fishery data management system for the Region**
  - **Develop commercial system (hardware, software, etc.) for the GSMFC**
  - **Develop the ComFIN data management prototype for Louisiana**

# All Activities

- **For-hire, commercial catch/effort, and data management activities guided by:**
  - **ComFIN Recommendation 14: To coordinate the ComFIN with other regional and national marine commercial fisheries data programs**
  - **RecFIN Recommendation 27: To coordinate the RecFIN(SE) with other regional and national marine recreational fisheries data programs**

**COMMISSION BUSINESS MEETING  
MINUTES  
March 18, 1999  
New Orleans, Louisiana**

**APPROVED BY:**

  
**COMMITTEE CHAIRMAN**

Chairman George Sekul called the meeting to order at 8:35 a.m. He opened the meeting with a prayer and welcomed the Commissioners to the 49<sup>th</sup> Annual Spring Meeting. L. Simpson noted that a quorum was present. He reviewed pertinent rules and regulations regarding the appropriate meeting procedures.

The following Commissioners and/or proxies were present:

**Commissioners**

Ed Conklin, FDEP, Tallahassee, FL  
Vernon Minton, ADCNR/MRD, Gulf Shores, AL (*Proxy for James Martin*)  
Chris Nelson, GSMFC, Bon Secour, AL  
Walter Penry, Alabama Legislature, Daphne, AL  
Mike Ray, TPWD, Austin, TX (*Proxy for Andrew Sansom*)  
L. Don Perkins, GSMFC, Houston, TX  
George Sekul, Chairman, Biloxi, MS  
Corky Perret, MDMF, Biloxi, MS (*Proxy for Glade Woods*)  
John Roussel, LDWF, Baton Rouge, LA (*Proxy for James Jenkins*)  
Frederic L. Miller, GSMFC, Shreveport, LA

**Staff**

Larry Simpson, Executive Director, Ocean Springs, MS  
Ron Lukens, Assistant Director, Ocean Springs, MS  
Ginny Herring, Executive Assistant, Ocean Springs, MS  
Nancy Marcellus, Administrative Assistant, Ocean Springs, MS  
Dave Donaldson, Data Program Manager, Ocean Springs, MS  
Steve VanderKooy, IJF Program Coordinator, Ocean Springs, MS  
Jeff Rester, SEAMAP/Habitat Program Coordinator, Ocean Springs, MS  
Madeleine Travis, Staff Assistant, Ocean Springs, MS  
Jason Keenum, Staff Accountant, Ocean Springs, MS  
Cindy Yocom, Staff Assistant, Ocean Springs, MS

**Others**

Doug Frugé, USFWS, Ocean Springs, MS  
Tom McIlwain, NMFS, Pascagoula, MS  
Jerry Waller, ADCNR, Dauphin Island, AL  
John T. Jenkins, ADCNR, Dauphin Island, AL  
Terry R. Bakker, MDMF, Biloxi, MS  
Tom Van Devender, MDMF, Biloxi, MS  
C. Michael Bailey, NMFS, St. Petersburg, FL  
Bob Cooke, USFWS/Federal Aid, Atlanta, GA  
Bill Price, NMFS, Silver Spring, MD

### **Adoption of Agenda**

The agenda was adopted as presented.

### **Approval of Minutes**

The minutes of the meeting held October 15, 1998, were approved as presented.

### **GSMFC Standing Committee Reports**

Law Enforcement Committee (LEC) - J. Waller, Chairman for the LEC reported that the LEC met Wednesday, March 17, 1999. The Committee received copies of the ACCSP Confidentiality Protocols for review. They requested that the Commission send a letter to the ACCSP asking that the statement that currently reads "If an independent investigation is corroborated by these records, it can then be released as evidence.", be deleted. The LEC felt that the statement was ambiguous and subject to interpretation. Other information reviewed by the LEC included a Law Enforcement Policy Statement for the FIN Program, which was finalized.

The Committee continued discussions on radio broadcasts of fisheries information. They are looking toward a long-term solution to awareness of fisheries information through public broadcast, and requested that the Commission support this initiative to develop a channel similar to the NOAA Weather Radio, by writing letters to the Gulf Congressional delegation.

The LEC received a report on the trip ticket program in Louisiana. The program has been well received and compliance is high but there have been some complaints regarding the length of the forms. These complaints may go to the legislature requesting a change in the form or possibly doing away with the program. The LEC is against changes in the form and requested the Commission send a letter in support of the trip ticket program as it is currently operating to the Louisiana House and Senate Natural Resources Committees.

Other business discussed at the meeting was the growing population along the Gulf Coast. The LEC recommends the Commission play a more aggressive role in public outreach on commercial and recreational vessel safety regulations and safe boating practices. It was reported that Dave McKinney will work out of the newly established NMFS Office of Enforcement in Austin, Texas. His focus will be on enhancing State-Federal enforcement efforts in the Gulf.

**C. Perret made a motion to approve J. Waller's report, including the three requests. F. Miller seconded. The motion passed.**

Technical Coordinating Committee (TCC) Report - C. Perret reported that the TCC met on March 17, 1999. The TCC received a report from J. Roussel regarding the status of the freshwater introduction projects in Louisiana. Karen Mitchell, NMFS gave a presentation on the red drum tag and recapture project conducted by NMFS in 1997 and 1998. C. Perret requested the Executive Director to get copies of the final report on the tag and recapture project and have them sent to all of the Commissioners.

Three FMPs were submitted to the TCC for approval. They were blue crab; flounder; and spotted seatrout. The TCC did not have adequate time to review the FMPs and passed a motion to submit the FMPs to the State-Federal Fisheries Management Committee for their review. The TCC reserves the right to approve the FMPs at a later date.



The TCC received reports from the Anadromous Fish Subcommittee, Crab Subcommittee, SEAMAP Subcommittee, Data Management Subcommittee, Artificial Reef Subcommittee, and the Habitat Subcommittee. On behalf of the Anadromous Fish Subcommittee, the TCC recommended approval of a resolution supporting the need for a national fish hatchery system. After a great deal of discussion the title and text of the resolution (Attachment 1) were changed. D. Frugé stated for the record, that he did not initiate the presentation of this resolution, nor did he vote for it in Subcommittee or Committee.

The TCC motioned to approve a request by the Blue Crab Subcommittee to hold a general session on limited entry and a work group session to follow at the October 2000 meeting. They additionally requested \$5,000 to support speakers to the meeting. No action was taken by the Commissioners since a joint meeting of the Atlantic, Pacific and Gulf states will be held in October 2000, and plans and logistics have not yet been finalized. The Commissioners will consider this request at a later time.

The TCC approved a motion on behalf of the Habitat Subcommittee to begin working on an annotated bibliography on fishing operations in the Gulf of Mexico. Other business of the TCC regarded the review of inshore fishery sampling in the various states. The TCC requested Commission staff to review the monitoring activities in each State and report back to the TCC in the fall.

**F. Miller motioned to approve the report and revised resolution as presented. C. Perret seconded. The motion passed.**

State-Federal Fisheries Management Committee (S-FFMC) Report - L. Simpson stated that the S-FFMC met Wednesday, March 17, 1999. The Committee received reports from the Menhaden Advisory Committee and the Commercial/Recreational Fisheries Advisory Panel (C/RFAP). The C/RFAP discussed a proposal being considered by the FDA regarding new standards and approval of a mandatory post-harvest treatment process to prevent or eliminate vibrio in raw shellfish. They opposed the proposal and recommended that the S-FFMC request the Commission send a letter to that effect. The Commissioners decided to discuss this topic after hearing Commissioner's Chris Nelson's report later in the meeting. Other business discussed in the C/RFAP included a request to have speakers at the next meeting to discuss marine refuge and sanctuaries.

The S-FFMC will begin reviewing the Blue Crab FMP, concentrating on management. No action will be taken until the TCC has finished their review. The Committee delayed review of the spotted seatrout and flounder FMPs until the October 1999 meeting. The S-FFMC will include the C/RFAP in the FMP review process.

The Committee discussed the status and direction of the Gulf of Mexico Data Program. There was a discussion regarding the uses of available funds and the future of the program. Suggestions were made regarding future projects. Among the suggestions was to include the head boat program and menhaden sampling program in the Gulf of Mexico; updating trip ticket systems; integration of existing cooperative statistics program, etc. It was reported that the FIN Committee would be meeting April 5, 1999. **The S-FFMC motioned to meet following the FIN meeting for final action on funding and projects.**

F. Miller asked L. Simpson if the menhaden industry was taking any action regarding the number of sharks that are harvested by menhaden operations. L. Simpson stated that the industry was continuing efforts to reduce the number of sharks harvested and that they were aware of the importance of the issue. Their efforts include a long-term program, that has been certified by NMFS, that will actually count the number of sharks harvested, and will include observers. The industry continues looking at and working towards developing devices to reduce the shark bycatch.

Action on the C/RFAP request regarding the raw shellfish proposal to the FDA was deferred to other agenda items. There was no action required of the Commissioners. **C. Perret motioned to approve the report. F. Miller seconded. The motion passed.**

#### **NMFS/Southeast Regional Office (SERO) Report**

T. McIlwain reported on behalf of the NMFS/SERO. He reported that Rollie Schmitten is transferring to the NOAA International Trade Office. Mr. Schmitten will be replaced by Penny Dalton, formally of Senator Hollings (SC) staff.

He updated the Commissioners on Hurricane Andrew Disaster Funds. Four of the five Gulf states have submitted the necessary paperwork and they are currently being processed by NOAA. It will take approximately 60-90 days to complete this process. Funding for the red tide and Bonné Care disaster funds have been certified and released. The states have been notified to submit the necessary paperwork to allow for the release of the additional funds.

He reported that the red snapper commercial season opened February 1. The season is good with higher catches than the previous two years. It appears that this will continue through April. The Gulf Council motioned to request that the fall season operate on a one week open - one week closed basis. This is an effort to stabilize prices. The motion failed. NMFS will sponsor a workshop in Miami in April with the for-hire industry. They hope to find ways to extend the season in to the fall.

NMFS has recently published a generic vessel buy-back program in the *Federal Register*. If industry wants to participate in a buy-back program, the industry must vote to do so. The government would then loan funds to buy vessels back. The industry would then be responsible for paying back the loans. He requested that the states review this program so that they can comment on it at the proper time.

T. McIlwain reported that the mackerel season is currently closed. Stock assessments will be available next week. The Stock Assessment Panel for the Gulf Council will meet the last week of March.

He stated that shrimp virus' continue to be an issue. The EPA and USDA are looking to develop regulations. A Management Workshop was held in July. The proceedings are out for review. States are monitoring the situation in their waters for additional background information.

Finally, he reported that NMFS is currently reviewing amendments to FMPs required under the re-authorization language of the Sustainable Fisheries Act.

#### **USFWS Region 4 Office Report**

D. Frugé reported on behalf of USFWS Region 4. He reported that Gary Edwards, Assistant Director for Fisheries, Washington, D.C., has been promoted to Deputy Regional Director, and has moved to Anchorage, Alaska. Bob Cooke stated that a newly released email indicated that Cathy Short will be replacing Gary Edwards.

D. Frugé reported on activity at the FWS Panama City office. They continue to be involved in discussions with the State of Florida's Sturgeon Aquaculture Working Group regarding the draft "Implementation Plan for the Commercial Culture and Conservation of Native Sturgeon in Florida". They are also continuing a project involving sonic tracking of Gulf sturgeon in Choctawhatchee Bay and River. They are monitoring their movements and habitat use in the Bay and nearshore Gulf. They are also trying to identify sturgeon

spawning areas. They have found some in the Choctawatchee River and are expanding that effort in the Yellow River in Florida.

He stated that funding for the final (of three years) year will be provided to the Commission to continue support of the Fisheries Stewardship Initiative projects on striped bass restoration. The funds provided are approximately \$250,000.

### **Wallop/Breaux Sport Fish Restoration Funding Issue**

B. Cooke, USFWS, Federal Aid Division reported on current information regarding Sport Fish Restoration funding. He distributed several tables to assist with the discussion. Apportionments to the states will be reduced in FY99 by \$60 million. This reduction is the result of several increases in funding to other programs, the largest of which is the boating safety program. He estimated that apportionments to the states in FY2000 would be almost completely restored to FY98 funding levels. He indicated that the figures for FY2000 were estimates and that the total receipts presented appear high due to FY99 carry over.

He presented a table displaying the reductions by State. Alabama will be reduced by \$901,284; Florida's reduction is \$1,405,513; Louisiana's reduction is \$1,306,412; and, Mississippi's reduction is \$765,282. Reduction figures were not available for Texas, since Texas is not in B. Cooke's region. L. Simpson stated that original estimates for Texas are \$3 million. These are total reductions to the various agencies within the states, both freshwater and saltwater. B. Cooke explained how the reductions were determined. Although land mass is considered, the number of license holders from year to year is used to determine apportionments and, in this case reductions.

The Commissioners were concerned because the states were not notified earlier regarding these reductions. The states need notice of this type of funding at an earlier date so that they can plan their programs. In this instance, the states have been operating under the assumption that level funding would be available, and they are now three months into operations when they find out that funding will be substantially reduced. In many instances, programs will have to be halted and personnel may need to be laid off. B. Cooke explained that his agency was instructed by OMB not to release any information. Information would have to be supplied through Congress and others. B. Cooke stated that OMB's interpretation appears to be inconsistent with Congressional intent. Congress intent was not clearly written. Although a Congressional delegation attempted to provide OMB with additional information regarding their intent, OMB interpretation was within their guidelines and within the law. The Commissioner's asked if this could be fixed by Congress. B. Cooke reported that USFWS would not pursue this ruling any further.

B. Cooke stated that his agency would work with the states, with the funding available to help them, so that they can utilize the reduced funds in the most efficient manner. B. Cooke further reported that the administrative funds, which provide apportionments to the compact Commissions, has an overall reduction of \$8,498,646. This means that among other reductions, the Gulf Commission's apportionment will be reduced in FY99 and has been slated to be zeroed out in FY2000. L. Simpson asked B. Cooke to provide his office with a chart/table that will reflect the FY98, FY99, and FY2000 apportionments for the administrative funds to the Commissions.

In anticipation of this report from B. Cooke, L. Simpson had prepared a draft letter to Mr. Jaime Clark, Director, USFWS regarding the status of FY99 Federal Aids funds. **C. Perret motioned that the letter be revised to reflect figures provided in B. Cooke's report and sent to Mr. Clark, the Governors of the Gulf of Mexico, the Gulf Congressional delegation, and the State Directors. J. Roussel requested that the letter clearly define reductions and program-by-program apportionments so that information is available for constituents as necessary (Attachment 2). Being no objections, the motion passed.**

### Rec Fish 2000 Symposium

Bill Price, of NMFS, Silver Spring, MD, distributed a publication entitled "*Funding Sources for Recreational Fisheries Partnership Projects*", that was published by the National Recreational Fisheries Coordination Council that was established by President Clinton in 1995, by Executive Order 12962. The charge of this council is to improve the quality, function, sustainable productivity, and distribution of U. S. aquatic resources for increased recreational fishing opportunities.

B. Price reported that NMFS is convening a national symposium to address marine recreational fishery issues at the outset of the 21<sup>st</sup> century. The symposium will be held June 25-28, 2000 in San Diego, California. The symposium will bring together stakeholders who share an interest in marine recreational fishing, marine resource management, conservation, education and research. Symposium participants will focus on the key management, scientific, social, economic and political challenges facing recreational fisheries at the beginning of the 21<sup>st</sup> century. The symposium will be designed to meet these important objectives and to provide all stakeholders an opportunity to share their visions and perspectives on issues of significance to the future of marine recreational fisheries and to participate in the development of a platform for managing marine recreational fisheries using 21<sup>st</sup> century information to meet 21<sup>st</sup> century needs. Topics and issues were solicited from sponsors and partners, and a tentative agenda has been written. The Commission has been involved in this process and B. Price solicited continued Commission and State support for this project. He asked that the states provide his office with contacts so that he can keep them involved in this symposium as well as industry in the various states.

### FY 2000 NMFS Budget

L. Simpson referred the Commissioners to Tab C in the briefing book (NMFS FY2000 President's Budget Request). He reported that MARFIN was slated to be level funded, but stated that this reflects a \$500,000 cut from FY98, because this now includes the Northeast region. This program has been slated for use in the Gulf only. SEAMAP is once again level funded, although additional funds are needed. He reported that NMFS fishery statistics is slated for a \$1.2 million dollar increase. The recreational fishery harvest monitoring (MRFSS) has been requested to be reduced by \$800,000. The GulfFIN data collection effort, a new line item requested to be funded at \$3 million, has been zeroed out. All new line items are automatically zeroed out until their merits are established within NMFS. The Regional Councils reflect a small increase of \$300,000. The IJF grants have been level funded. He pointed out that the bulk of the funding under Interstate Fish Commissions goes to the East Coast. The total request is \$420.4 million, an increase of about \$33.6 million. Other highlights of the budget request showed continued funding of "fishery independent" information, although SEAMAP is only level funded, and \$1.5 million for grants to industry under the S-K Grant Program.

He pointed out that this is the early stages of the FY 2000 budget request, but wanted to present these initial figures for discussion or suggestions.

### Selection of Charles H. Lyles Award Recipient

G. Sekul opened the floor for nominations for the "*Charles H. Lyles Award*" to be presented at the October 1999 meeting. L. Simpson distributed copies of the Rules and Regulations for this award and a list of past recipients. **C. Perret nominated Senator Trent Lott. Chris Nelson seconded.**

L. Simpson spoke on behalf of Senator Lott stating his support of State and nationwide interest in marine programs, including SEAMAP, MARFIN, and funding for additional research vessels. C. Perret stated that Senator Lott has made great strides in the advancement of marine fisheries for the State of Mississippi. **J.**

Roussel motioned to close the nominations. Senator Lott was selected to receive the 1999 "Charles H. Lyles Award" by acclamation.

### 50<sup>th</sup> Annual Meeting Resolutions and Proclamations

R. Lukens reminded the Commissioner's to get final approvals on resolutions and/or proclamations regarding the Commission's 50<sup>th</sup> birthday from the various legislatures and Governors. He provided sample resolutions for assistance. He noted that it was important to get these documents finalized soon, so that they could be distributed at the Commission's 50<sup>th</sup> Year celebration to be held in October 1999.

### Possible Ban on Fresh Raw Oyster Sales

C. Nelson referred to the *Federal Register* announcement that appeared in January 1999. The notice was presented in response to a citizen's petition put before the Food and Drug Administration (FDA) by the Center for Food Safety and Applied Nutrition. He briefed the group on the background of the Center for Food Safety and Applied Nutrition and stated that they have been addressing oysters as a dangerous food source for almost five years, due to a naturally occurring bacteria. This bacteria, *Vibrio vulnificus*, occurs in oysters and in coastal waters. It is perhaps the most numerous marine bacteria in the world. It is an ordinarily innocuous bacteria, unless a person has an underlying immune system disorder, primarily liver disease. In these instances, it can go from being completely innocuous to being very deadly. You would be at risk by either consuming raw seafood or by a wound infection.

C. Nelson gave background information regarding this issue and how it has been addressed. Beginning in 1985, the ISSC held a symposium in Washington, D.C. The outcome was to identify high risk groups and provide educational material to them regarding the danger of consuming or coming into contact with raw seafood. From 1985 to 1994, the ISSC provided funding for educational material and distributed these materials through health care providers and also to various medical facilities to try to get the information to high risk groups. The industry volunteered reductions in time from harvest to refrigeration, and also provided consumer information at the point of sale and in the form of labeling. In 1994, the FDA proposed that oysters harvested from the Gulf from April 1 through October 31, no longer be available for raw consumption, and sold only in the shucked form. That proposal was defeated, and replaced by tougher regulations on shorter time frames from harvest to refrigeration, more research and a more aggressively funded educational program. This resulted in \$500,000 given directly to the FDA to fund educational programs targeting the at risk population. In 1995 even tougher refrigeration regulations were put in place.

The citizen's petition, put forth by the Center for Food Safety and Applied Nutrition, request that the FDA establish a performance standard of "nondetectable" for the marine bacterium *Vibrio vulnificus* in raw molluscan shellfish harvested from waters that have been linked to illnesses from this organism. The FDA has requested information and views from the general public regarding this petition prior to April 21, 1999.

C. Nelson reported that the industry has been meeting to address the petitions and questions raised in the FDA request. The industry agrees that the petition should be opposed. The major reason is that it would mandate that all oysters go through a process, that would result in a nondetectable level of *Vibrio vulnificus*. Only one technology exists that would result in that, and it is a patented process that is owned by the AmeriPure Co. in Franklin, Louisiana. This would result in the loss of the raw market, and a loss to the general population that are not at high risk. The industry does not feel that the general population should be denied this market based on the small number of annual outbreaks. There would be considerable economic impact to the small harvester and processor. The process is expensive for small businesses that would have to consider the cost of the patent, royalties and machinery. These additional costs would have to be passed

on to the consumer. The industry and the ISSC agree that it is not a good policy to mandate a performance standard for an organism which is not ordinarily injurious to the average consumer.

**C. Perret motioned to have the Commission respond to the FDA's request and go on record opposing the establishing of a performance standard of "nondetectable" for the marine bacterium *Vibrio vulnificus* in raw molluscan shellfish harvested from waters that have been linked to illness from this organism. F. Miller amended the motion to include the C/RFAP's request to also oppose the performance standard and the mandatory post harvesting process. The motion was seconded and approved. The Commissioner's requested that L. Simpson distribute drafts of the letter prior to sending it.**

### **Status of Commission's Cooperative Data Collection Program**

RecFIN and ComFIN - D. Donaldson distributed copies of *The Fisheries Information Network (FIN)* brochure that was completed recently. He reported that the Commission's Data Collection Program, FIN consists of two major components: the Commercial Fisheries Information Network (ComFIN) and the Recreational Fisheries Information Network [RecFIN(SE)]. These programs establish a state-federal cooperative program to collect, manage, and disseminate statistical data and information on the marine commercial and recreational fisheries of the Southeast Region.

He reported that RecFIN(SE) has been working on various issues and problems regarding data collection and management of recreational data. The most significant activities relate to the collection of effort data for the for-hire fishery and implementation of the Marine Recreational Fisheries Statistics Survey (MRFSS) in the Gulf of Mexico. These activities are administered and coordinated by the Commission.

The ComFIN meets on a regular basis to address various issues and problems concerning the collection and management of marine commercial data. Some items being discussed are the development of a ComFIN Data Management System Prototype and a trip ticket program in the Gulf states. He reported that Congress has allocated funding for these activities.

Through coordination with other regional programs (ACCSP, Pacific RecFIN, and PacFIN), he hopes to ensure compatibility and comparability of programs. The ultimate goal is a national data collection program.

Menhaden Port Samplers - D. Donaldson reported that the Commission continues to support this program through subcontracts and independent contractors in the various states. This support is provided with no administrative cost to the Commission.

Head Boat Port Samplers - D. Donaldson reported that the Commission supports this program with subcontracts and independent contractors in the various states as well. Current funding is only available through September 1999. The Commission is currently trying to have both the menhaden and head boat port sampler programs included in a Cooperative Agreement structure. This would ensure the program's continuation and would provide administrative support to the Commission.

### **Report on Joint Habitat Program with Councils**

J. Rester stated that the Commission's habitat activities had been previously discussed under C. Perret's TCC report. He updated the Commissioners on the Councils's habitat activities. He reported that the Louisiana and Mississippi Habitat Advisory Panel met in November 1998 to review ongoing projects as well as a new project involving the expansion of the President Casino off of the Biloxi, Mississippi coast. In December, the NMFS and the Gulf Council agreed that the Essential Fish Habitat (EFH) document needed to be readily

available to the public and to the regulatory agencies. The document is now available on the Internet through the GSMFC homepage.

J. Rester reported that in January, the Council reviewed the expansion of the President Casino project, and they concurred with the NMFS, USFWS and EPA, that the expansion of this casino would significantly impact the resources and habitat in the Gulf of Mexico.

The EFH document was partially approved by NMFS in February. The document only addresses 26 species, and the NMFS requested that EFH be identified for all species under the Council's jurisdiction. There were also questions about the fishing impact section of the document. The Council responded to these comments in a letter in March, stating that it was NMFS responsibility to supply habitat information to the Council.

J. Rester reported that he continues to monitor public notices and other projects that negatively impact habitat in the Gulf of Mexico. He informed the Commissioner's that the EFH consultation is now in effect.

### Administrative Manual Revisions

L. Simpson presented the GSMFC Purchasing Guidelines. He stated that these guidelines are established procedures but have not been formally written into the Commission's Administrative Manual. At the request of the Commission's auditors, staff has put the guidelines in writing so that the Commissioners can vote to have them included in the Administrative Manual. **F. Miller motioned to approve the guidelines and to include them in the GSMFC's Administrative Manual. V. Minton seconded. The motion was approved.**

### Executive Committee Report

G. Herring reported that the Executive Committee did not meet during this meeting. She distributed a current financial statement (2/28/99). She reported that the Commission's financial situation was stable and that she continued to monitor the various subcontracts with the states and watch the daily cash flow of the Commission's accounts. Amendments to the budget will be made, based on the reported reductions in the Sport Fish Program.

### Future Meetings

G. Herring reported that the 50<sup>th</sup> Anniversary Subcommittee met on March 17. The anniversary meeting will be held at the Casino Magic Hotel in Biloxi, Mississippi the week of October 18-22, 1999. The theme for the meeting is *Preserving the Past - Planning the Future - A Cooperative Effort*. R. Lukens is working on speakers and topics for a half day General Session. A logo for the 50<sup>th</sup> Anniversary has been developed and will be used throughout 1999 in celebration of the event. The format of the meeting will be changed for this special occasion. V. Minton encouraged all of the State Directors to attend with their staffs. He stated that the information and history that will be provided during this meeting will be an important tool for all persons involved in GSMFC activities. Special events will be held during this meeting to celebrate the Commission's Anniversary. G. Sekul is planning a Schooner Race and will assist staff with media coverage of this meeting.

G. Herring stated that the Spring 2000 meeting will be held March 13-16, 2000 in Alabama. The fall meeting will be held jointly with the ASMFC and PSMFC in Florida, October 16-20, 2000. G. Herring will be working with the other Commissions to decide on a location. Current locations being considered are Tampa, Destin and Captiva Island. E. Conklin stated his only recommendations would be not to go to Orlando or Key Largo.

## **Publication List**

L. Simpson stated the Publication List has been updated and is provided for informational purposes. Contact the office if you need copies of any publication.

## **State Director's Reports**

Florida - E. Conklin reported on activities in the Florida Department of Environmental Protection (FDEP). He reported that the Florida Legislature is currently in session. The major activity affecting the FDEP and fisheries management in Florida is a reorganization that is the result of a constitutional amendment. This amendment requires that the saltwater and freshwater agencies merge and become one new Commission. The Legislature will decide on the agency staffing. The issue now is how much of the FDEP will go to the new merged Commission. Early efforts appear to have a significant portion of the FDEP staff going to the new Commission. Nothing is currently confirmed but he anticipates that final decisions will be made within the next few weeks.

Alabama - V. Minton reported for Alabama Department of Conservation and Natural Resources (ADCNR). He reported that Alabama has a new Commissioner, Mr. Riley Boykin Smith. Mr. Smith has been involved with the Alabama Wildlife Federation, the National Wildlife Federation, and the Wild Turkey Federation for many years. V. Minton stated that he is an avid fishermen and hunter and he looks forward to continuing to work with Mr. Smith.

V. Minton had previously reported on the large amount of debris left behind by Hurricane Georges. The ADCNR applied for and received a TED exemption for 170 days from NMFS. He reported that Bayou La Batre received a \$2 million grant from the Department of Labor to assist fishermen displaced due to Hurricane Georges. The grant was used in three areas utilizing fishermen: shore clean-up, water debris pick-up, and oyster relay and oyster shell planting.

The ADCNR has recently applied to the Corp of Engineers for ten (10) additional inshore reefs sites. They have been working with Coastal Conservation Association, Wildlife Federation and shrimp industry to identify these sites. They are trying to utilize historical oyster reefs or current locations of hangs.

V. Minton reported that the MRFSS program is going well in Alabama. He recently received approval to hire additional personnel. They will include six (6) biological aides and a new biologist. ADCNR now has a web site. The address is [www.dcnr.state.al.us/mr](http://www.dcnr.state.al.us/mr). This site was developed in house by Ralph Havard and Jim Duffy. It is maintained in house as well.

Mississippi - C. Perret reported for the Mississippi Department of Marine Resources (MDMR). He reported that in November the Gulf Council made requests under the emergency regulations on red snapper that were denied. A request for a later recreational season, size limit change, etc. has also been made under the regulatory amendment and is still pending. The MDMR is in the midst of a letter of intent to do some of these requested changes and is anxious to get a decision from NMFS so that the Department can move forward.

He reported that the Mississippi Legislature is in session. A major piece of legislation being addressed is to have law enforcement become a part of the MDMR. It has been approved in both houses and is now in a conference committee. C. Perret anticipates that the legislation will be approved and law enforcement will be moved to the MDMR. This will be for marine law enforcement only and will increase the number of employees by forty (40).



Louisiana - J. Roussel reported for the Louisiana Department of Wildlife and Fisheries (LDWF). He reported that the Louisiana Legislature is in session. He anticipates several fisheries issues will be addressed.

J. Roussel updated the Commissioners on the oyster relocation program. The LDWF is an active participant in this program which is administered by the Louisiana Department of Natural Resources. The final rules have been promulgated and the administrative paper work is in place. His department will continue to be involved in this program and he will provide information as it becomes available.

In regards to this program, a class action suit that had been filed has been dismissed by the Fourth Circuit Court. This does not prevent this suit from being appealed in a higher court. Also in relation to oysters, J. Roussel reported that a mandamus was filed in court in an attempt to have the Health Department require post harvest treatment of oysters and to only allow the marketing of oysters that had been treated and had nondetectable levels of *vibrio*. The attempt was dismissed in court since the judge did not feel that a mandamus was the appropriate means to seek this type of ruling. He advised the plaintiffs to go directly to the Department of Health and petition them.

Louisiana still has a great deal of oil and gas exploration. With the development of 3-D seismic technology, there has been an increase in coastal conflicts. The Department has just completed amendments to their seismic regulations. Two of the most notable changes that he hopes will help solve these conflicts are: a pre-project meeting on site with all persons involved or impacted by the activities present and informed; and, a requirement that all companies engaged in seismic activities tag all equipment so that it can be identified as being from that particular company.

Texas - M. Ray reported for Texas Parks and Wildlife Department (TPWD). The TPWD is revisiting its shrimp management program in an effort to create a long-term, sustainable, profitable, and environmentally responsible shrimp fishery. This is the first comprehensive restructuring of Texas shrimp rules in 40 years and will address assessments based on biological, social, economic, enforcement, and industry-related considerations. The Department is also doing a bycatch reduction (BRD) study in Matagorda Bay in the spring and fall.

He reported that the Texas Legislature is in session. A major piece of legislation involving TPWD is an initiative started by commercial finfish fishermen regarding limited entry. It will basically impact the number of trotlines fished, increase license fees, restrict periods that a commercial finfish license could be sold, and develop a specific license for saltwater trotline fishing.

Recent studies on the protection of seagrass beds in the inland bay areas have resulted in various proposals. One of the most controversial ones involves Port Aransas, where 5,000 square acres is being proposed to be protected from outboard motor damage. There is also a proposal to protect an area in Laguna Madre called the Nine-Mile Hole from this type of damage as well. It will not eliminate people from having access to these areas, just restrict how access is gained or what type of activities are allowed to protect the seagrass in that area. Along these lines, there is also a petition to make Padre and South Padre Island a permanent marine sanctuary for sea turtles. He will update the Commissioner's on these ongoing efforts.

### Other Business

L. Simpson presented information on the *Seventh International Conference on Artificial Reefs and Related Aquatic Habitats*, which will be held October 7-11, 1999 in San Remo, Italy. He reported that Bill Price has authorized and agreed to fund the international travel for a Commission participant. The Artificial Reef Subcommittee recommended that John Dodrill from Florida be allowed to go. **C. Perret motioned to send John Dodrill to the meeting in San Remo as the Commission's representative, and if he is unable to**

**attend an alternate will be selected by ballot, distributed from R. Lukens, L. Simpson and/or the Artificial Reef Subcommittee. F. Miller seconded. The motion carried.**

L. Simpson distributed copies of Senate Bill 25 and H.R. 798. In regards to S. 25, which provides coastal impact assistance to state and local governments to establish a fund to meet the outdoor conservation and recreation needs of the American people, and other purposes. He does not anticipate that this bill will make it past committee. In the House, however, H.R. 798 which provides permanent protection of the resources of the U.S., includes all of the states, not just the coastal states. He referred to Title VI of this bill entitled *Living Marine Resources Conservation, Restoration, and Management Assistance*. He asked that the Commissioners review this legislation and return their comments and thoughts to him. **C. Perret motioned to have staff continue to watch and closely review H.R. 798 and to look closely at this legislation in terms of formalizing the data collection programs. F. Miller seconded. The motion carried.**

B. Price informed the Commissioners that if they or their staffs were interested in presenting a paper at the Rec Fish 2000 Symposium, the call for papers will be closed on May 15, 1999.

**The meeting was adjourned at 1:55 pm.**



Larry B. Simpson  
Executive Director

## GULF STATES MARINE FISHERIES COMMISSION

P.O. Box 726, Ocean Springs, MS 39566-0726

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[www.gsmfc.org](http://www.gsmfc.org)

### RESOLUTION

#### ON THE NEED FOR A CONTINUED NATIONAL FISH HATCHERY SYSTEM

WHEREAS fish hatcheries can be a valuable tool in comprehensive fisheries restoration/management programs, and

WHEREAS the U.S. Fish and Wildlife Service (USFWS) has a long history of successfully managing a series of fish hatcheries throughout the nation, and

WHEREAS the States in the Gulf of Mexico region have relied for many years on the USFWS fish hatcheries to supply hatchery reared striped bass in excess of those produced by state fish hatcheries, and

WHEREAS the Striped Bass Fishery Management Plan (FMP) of the Gulf States Marine Fisheries Commission (GSMFC) calls for continued stocking of hatchery-reared Gulf striped bass in concert with habitat improvement and other restoration and management actions, and

WHEREAS the Memorandum of Understanding among the States of Alabama, Florida, and Georgia and the USFWS to restore striped bass in the Apalachicola-Chattahoochee-Flint River System and a Memorandum of Understanding between the Commission and the USFWS call for continued interagency cooperative stocking of hatchery-reared Gulf striped bass, and

WHEREAS the need for hatchery-reared Gulf striped bass, as called for in the FMP, exceeds the production capacity of state and federal fish hatcheries,

NOW THEREFORE BE IT RESOLVED that the GSMFC believes that fish hatcheries can be an important tool in many fisheries restoration/management programs, and while hatchery stock enhancement can negatively impact wild stocks if not carefully executed, captive propagation can be applied effectively, given proper evaluation of hatchery stocked fish, to assist in restoring declining fish populations and managing fisheries which require supplementing natural reproduction.

RESOLUTION

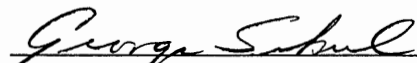
Need for a Continued National Fish Hatchery System

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BE IT FURTHER RESOLVED that the federal fish hatchery system, managed and maintained by the USFWS, plays a vital role in restoring and managing native stocks of striped bass in the Gulf of Mexico region.

BE IT FINALLY RESOLVED that the GSMFC supports continued federal funding of the fish hatchery system of the USFWS for such applications as interjurisdictional fisheries restoration and management, restoration of threatened and endangered species (such as Gulf sturgeon), management of fisheries programs on USFWS lands, and research to support fish hatchery practices.

*Given this the eighteenth day of March in the year of Our Lord, One Thousand, Nine Hundred, Ninety-nine.*

  
\_\_\_\_\_  
George Sekul, Chairman  
Gulf States Marine Fisheries Commission



Larry B. Simpson  
Executive Director

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March 29, 1999

Ms. Jaime Clark  
Director, U.S. Fish and Wildlife Service  
1849 C Street, NW  
Washington, DC 20240

Dear Ms. Clark:

The Gulf States Marine Fisheries Commission (GSMFC) is a legal compact of the States of Mississippi, Florida, Alabama, Louisiana, and Texas for the following purpose: “. . . to promote the better utilization of the fisheries, marine, shell and anadromous, of the seaboard of the Gulf of Mexico, by the development of a joint program for the promotion and protection of such fisheries and the prevention of the physical waste of the fisheries from any cause.” The GSMFC was established through separate state legislation and authorized through Public Law 81-66. We have had a long and productive history working with the U.S. Fish and Wildlife Service (Service), and since 1987 have worked even more closely through a program supported by Administrative Funds from the Federal Aid in Sport Fish Restoration Program (Federal Aid). Over the past twelve years, the GSMFC and its member states have worked with the Service on such important topics as Gulf striped bass restoration, regional artificial reef development and management, development of a comprehensive marine fisheries data program, and interstate management of nearshore marine and estuarine fisheries.

We have recently been made aware of a decision by the President's Office of Management and Budget (OMB) regarding the status of 1999 Federal Aid funds. As a result of the 1999 reauthorization of the Aquatic Resources Trust Fund through passage of the Transportation Equity Act for the 21<sup>st</sup> Century (TEA 21), the apportionment of Federal Aid funds to the states, and the amount of funding available for program administration, will be reduced, possibly by as much as 22.6%. The interpretation by OMB that the boating safety funds for 1998 and 1999 should both be taken out of the 1998 tax receipts is erroneous. According to Senator John Breaux, original author of the Wallop-Breaux amendments to the Federal Aid in Sport Fish Restoration Act and co-author of the TEA 21 amendments, in a letter to OMB, the interpretation by OMB is not consistent with the intent of Congress, will cause significant hardship to state and other programs, and should be overturned.

The table below provides the amount of funding for each Gulf State, under normal apportionment rules, and provides the amount of funding that would be lost to each state in the event of a reduction of 22.6%.

-Alabama-

-Florida-

-Louisiana-

-Mississippi-

-Texas-

Ms. Jaime Clark

March 29, 1999

Page 2

	<u>State</u>	<u>Normal</u>	<u>Reduced</u>	<u>Difference</u>
•	Texas	\$13,629,457	\$10,549,200	\$3,080,257
•	Louisiana	\$ 4,458,938	\$ 3,451,218	\$1,007,720
•	Mississippi	\$ 3,463,271	\$ 2,680,572	\$ 782,699
•	Alabama	\$ 3,923,270	\$ 3,036,611	\$ 886,659
•	Florida	\$ 6,941,124	\$ 5,372,430	\$1,568,694

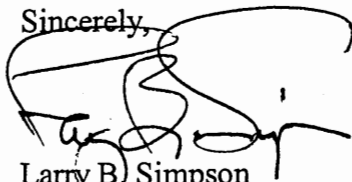
As you can see, such a reduction will result in significant funding shortfalls in each state, and is likely to result in loss of personnel and programs.

In addition to the significant negative impact to the state apportionments, the Service is considering reducing the amount of administrative funding to the Interstate Marine Fisheries Commissions. If an equal percentage is used for that reduction, the Gulf States Marine Fisheries Commission's administrative funding would be reduced from \$200 thousand to \$154.8 thousand. While this may not seem like much money, such a reduction will have a significant impact on our ability to accomplish the important tasks we face.

We recognize the need to cooperate with the Service as we try to dig our way out from under this oppressive situation caused by OMB's misinterpretation of the Congressional language in TEA 21. However, we are very concerned that this misinterpretation may result in yet additional funding reductions in future years. Thus, the Gulf States Marine Fisheries Commission is supporting an initiative, spearheaded by Senator Breaux from Louisiana, to develop a legislative solution which would clear up the language for OMB and get us all back on track. In that regard, the funding provided to the three interstate marine fisheries commissions should be returned to the original amount of \$200 thousand for FY 2000 and beyond.

Thank you for your attention to our concerns regarding this most frustrating and confusing issue, and we will be pleased to work with you and your staff to find a more palatable solution than that which we are facing. We anxiously await your decision regarding the disposition of FY 1999 apportionments to the states and administrative funds for the Gulf States Marine Fisheries Commission.

Sincerely,



Larry B. Simpson  
Executive Director

cc: GSMFC Commissioners and Proxies



Larry B. Simpson  
Executive Director

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## RESOLUTION

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WHEREAS fish hatcheries can be a valuable tool in comprehensive fisheries restoration/management programs, and

WHEREAS the U.S. Fish and Wildlife Service (USFWS) has a long history of successfully managing a series of fish hatcheries throughout the nation, and

WHEREAS the States in the Gulf of Mexico region have relied for many years on the USFWS fish hatcheries to supply hatchery reared striped bass in excess of those produced by state fish hatcheries, and

WHEREAS the Striped Bass Fishery Management Plan (FMP) of the Gulf States Marine Fisheries Commission (GSMFC) calls for continued stocking of hatchery-reared Gulf striped bass in concert with habitat improvement and other restoration and management actions, and

WHEREAS the Memorandum of Understanding among the States of Alabama, Florida, and Georgia and the USFWS to restore striped bass in the Apalachicola-Chattahoochee-Flint River System and a Memorandum of Understanding between the Commission and the USFWS call for continued interagency cooperative stocking of hatchery-reared Gulf striped bass, and

WHEREAS the need for hatchery-reared Gulf striped bass, as called for in the FMP, exceeds the production capacity of state and federal fish hatcheries,

NOW THEREFORE BE IT RESOLVED that the GSMFC believes that fish hatcheries can be an important tool in many fisheries restoration/management programs, and while hatchery stock enhancement can negatively impact wild stocks if not carefully executed, captive propagation can be applied effectively, given proper evaluation of hatchery stocked fish, to assist in restoring declining fish populations and managing fisheries which require supplementing natural reproduction.

-Alabama-

-Florida-

-Louisiana-

-Mississippi-

-Texas-

RESOLUTION

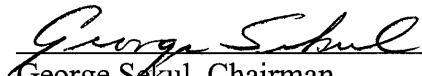
Need for a Continued National Fish Hatchery System

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BE IT FURTHER RESOLVED that the federal fish hatchery system, managed and maintained by the USFWS, plays a vital role in restoring and managing native stocks of striped bass in the Gulf of Mexico region.

BE IT FINALLY RESOLVED that the GSMFC supports continued federal funding of the fish hatchery system of the USFWS for such applications as interjurisdictional fisheries restoration and management, restoration of threatened and endangered species (such as Gulf sturgeon), management of fisheries programs on USFWS lands, and research to support fish hatchery practices.

*Given this the eighteenth day of March in the year of Our Lord, One Thousand, Nine Hundred, Ninety-nine.*

  
George Sekul, Chairman  
Gulf States Marine Fisheries Commission



APPROVED BY:

  
COMMITTEE CHAIRMAN

SOUTHEAST RECREATIONAL FISHERIES INFORMATION NETWORK [RecFIN(SE)] <sup>21 Sept.</sup>  
MINUTES <sup>'99</sup>

Tuesday, April 6, 1999  
La Parguera, Puerto Rico

Craig Lilyestrom called the meeting to order at 8:30 am. The following members, staff, and others were present:

**Members**

Steven Atran, GMFMC, Tampa, FL  
Kevin Anson, AMRD, Gulf Shores, AL  
Jeff Brust, (proxy for L. Kline) ASMFC, Washington, DC  
Page Campbell, (proxy for L. Green), TPWD, Rockport, TX  
Bob Dixon, NMFS, Beaufort, NC  
Kerwin Cuevas, (proxy for T. Van Devender), MDMR, Biloxi, MS  
Graciela Garcia-Moliner, CFMC, San Juan, PR  
Michelle Kasprzak, (proxy for J. Shepard), LDWF, Baton Rouge, LA  
Wilson Laney, USFWS, Raleigh, NC  
Craig Lilyestrom, PRDNER, San Juan, PR  
Ron Lukens, GSMFC, Ocean Springs, MS  
Joe O'Hop, FDEP, St. Petersburg, FL  
Maury Osborn, NMFS, Silver Spring, MD  
Tom Schmidt, USNPS, Homestead, FL  
Toby Tobias, USVI/DFW, St. Croix, USVI  
Carter Watterson, (proxy for D. Mumford), NCDMF, Morehead City, NC

**Others**

Mark Alexander, CDEP, Old Lyme, CT  
Jill Kelly, LDWF, Baton Rouge, LA  
Ivan Mateo, USVI/DFW, St. Croix, USVI  
Corky Perret, MDMR, Biloxi, MS  
John Poffenberger, NMFS, Miami, FL  
Ana Roman, USFWS, Boqueron, PR

**Staff**

Dave Donaldson, GSMFC, Ocean Springs, MS  
Madeleine Travis, GSMFC, Ocean Springs, MS

**Approval of Agenda**

The agenda was adopted as presented.

**Approval of Minutes**

The minutes from the Southeast Recreational Fisheries Information Network [RecFIN(SE)] meeting held on November 11, 1998 in Tampa, Florida were approved as amended.

### **Presentation of Information Regarding Non-Rod-and-Reel Fisheries**

D. Donaldson distributed copies of non-rod-and-reel forms which had been sent out to Committee members for completion. This form lists the type of gear, magnitude, data collection activities if any, and license requirements for each state. There was discussion by the Committee on this issue which resulted in several suggestions. S. Atran noted that the National Marine Fisheries Service (NMFS) has published a list of allowable gear for each species that is under management. C. Perret suggested that either PRELIMINARY or DRAFT be printed on this document since it is not complete and is of a sensitive nature. M. Osborn noted that the data in the Marine Recreational Fisheries Statistics Survey (MRFSS) includes alternate gears in the creel intercept and this information may be helpful. K. Anson questioned whether the magnitudes could be defined by ranking the top 5 or 10 fisheries which need attention.

After lengthy discussion the Committee agreed on several actions. D. Donaldson will again send the non-rod-and-reel forms to Committee members for completion, which may include any additional information which would be helpful in assessing the magnitude of the fisheries. Members will also be asked to rank the top 5 fisheries in terms of magnitude. P. Campbell will check on documents outlining special studies for gigging in Texas. There will be further discussion on non-rod-and-reel fisheries at the Fall meeting. At that time the Committee will decide if a work group should be tasked with further investigation.

### **Discussion of Quota Monitoring Policy Statement**

D. Donaldson reviewed the discussion on quota monitoring from the previous RecFIN(SE) meeting. At that time a motion was passed to have this Committee coordinate with the ACCSP to develop a position statement regarding the use of quota monitoring and closures in recreational fisheries. Donaldson contacted J. Moran of the ACCSP to determine their position on recreational quota monitoring and found that the ACCSP will address this subject later in the year. Donaldson stated that in order to insure compatibility and comparability with the ACCSP, he will be involved in the ACCSP discussions later this year.

W. Laney questioned whether quota monitoring results in increased management efficiency, both in resource conservation as well as expenditures. J. O'Hop stated that quota monitoring can work in limited areas, however for a very large fishery it may be inefficient. O'Hop agreed with Laney and felt that some information on risk be included in any recommendation on quota

monitoring. M. Osborn noted that the ACCSP has also been dealing with quota monitoring and they feel that this is not the optimum way to manage a fishery from the viewpoint of the fisherman and charter boat industry. W. Laney noted that there is only one fishery where recreational quota monitoring has been successful, the striped bass fishery on the Roanoke River in North Carolina. It takes place in the spring, has a low quota, and is in a confined geographic area. Laney also noted that imposing a trip limit is another alternative.

M. Osborn noted that the MRFSS is not appropriate for quota monitoring, however quota monitoring is being used with tagging systems, call-in systems, IVR, etc. Since it appears that quota monitoring is inevitable, it may be time to begin investigating the costs and benefits of various systems. Osborn suggested referring this issue to the Biological/Environmental Work Group and arrange presentations to the Committee on the North Carolina survey, the large pelagic survey, and the striped bass survey. D. Donaldson noted that there are ongoing discussions concerning potential activities for funding with one suggestion being to look into the development of quota monitoring systems. Since the ACCSP is also working on quota monitoring, Donaldson suggested that a joint meeting may be beneficial. Committee members agreed that these two avenues be pursued.

#### **Discussion of the Compilation of Private Access Site Information**

D. Donaldson stated that at the last meeting, there was a recommendation to develop a definition for private access sites and to select several areas in the southeast to begin compiling information. This recommendation was made prior to the suggestion that the South Atlantic states no longer actively participate in FIN, therefore, Donaldson suggested selecting sites in the Caribbean and the Gulf.

M. Osborn suggested revisiting priorities that were developed from the recommendations document since currently there are several different issues being investigated. She noted that charter boats have been addressed, and perhaps this would be a good time to choose another high priority area for study. After Committee discussion, it was agreed that the Biological/Environmental Work Group will meet before the Fall meeting and re-examine the recommendations made as a result of the facilitated session. The work group will then make recommendations to this Committee concerning which areas should next be addressed. Prior to the Work Group meeting, M. Osborn and D. Donaldson will discuss the costs of the areas under consideration.

## Work Group Reports

Biological/Environmental Work Group - D. Donaldson reported on the Biological/Environmental Work Group meeting which was held on April 5, 1999.

Marine Recreational Fisheries Surveys in the Caribbean - C. Lilyestrom reported to the Work Group that the proposal submitted by Puerto Rico to the USFWS has been funded with Wallop-Breaux funds. There was discussion on how to utilize point access intercept surveys to collect catch information, while aerial surveys are being considered to collect effort information. M. Osborn has offered to assist Puerto Rico in several areas which include:

- estimating costs for conducting the MRFSS in Puerto Rico,
- provide the codes and species lists,
- provide the data entry program,
- provide statistical estimations and survey design assistance,
- provide site selection program,
- provide information on scanning technology for data entry,
- send a NMFS statistician to San Juan for consultation with the Puerto Rico staff.

D. Donaldson will provide Lilyestrom with a site register database structure. C. Lilyestrom reported that for the first year Puerto Rico will address tournaments, charter boats, and private boats, and noted that the last time this was done was in 1989.

T. Tobias explained the recreational data assessment program in the U.S. Virgin Islands (USVI), and M. Osborn offered to send a statistician to assist. Tobias reported that in the USVI, recreational fishing information was collected from 1982 to 1994. A pilot study was initiated to start a roving creel survey. Information on recreational fishing tournaments has been collected for 25 years. Logbooks are distributed to participating recreational fishermen for the logbook survey. The USVI has initiated a socio-economic survey and a telephone survey.

Metadata - D. Donaldson reported that at the last meeting a recommendation was made to ask the ASMFC Law Enforcement Committee (LEC) to consider compiling a document similar to the GSMFC Law Summary. The ASMFC LEC was concerned because of the potential for error in such a document, and because laws in some states change quickly. Therefore they decided not to produce and distribute a law summary.

Donaldson noted that one of the issues being considered for funding is the development of a data management prototype for Louisiana which contains a metadata component.

Night Fishing Activities - D. Donaldson reported that information was supplied to the Work Group on the magnitude of night fishing, night vs day, public vs private, and species caught and targeted. The site register form for MRFSS has recently been modified to include questions on night fishing. That information is being compiled and should be available for analysis by the end of this year. Donaldson noted that since it was decided earlier in the meeting to task the Biological/Environmental Work Group with prioritizing the major topics under consideration at this time, analysis of the night fishing data may not be undertaken pending a decision by the Committee.

Fishing Tournaments - D. Donaldson reported that a list of fishing tournaments in the Southeast was compiled with information on species targeted, location, and contact person. In the case of the NMFS billfish tournament program, there was not much familiarity with the RecFIN(SE) program, therefore the Work Group recommended that a NMFS member of this Committee contact NMFS billfish personnel with information on RecFIN(SE). R. Lukens noted that T. Lowery of NMFS Pascagoula will try to attend the next RecFIN(SE) for coordination purposes. M. Osborn noted that the Work Group discussed doing workups on the cost of a survey to determine who would be interested in participating in a voluntary survey on the web. J. O'Hop noted that there are 170 tournaments in Florida and some of these are surveyed. Again, any decisions on the issue of tournaments will be made after the Work Group meets and makes recommendations on priorities.

#### **Update on Charter Boat Pilot Survey in the Gulf of Mexico**

D. Donaldson reviewed the development of the Charter Boat Pilot Survey noting that in September 1997 the NMFS, the Gulf states, and the GSMFC implemented the survey. Initially three methods were compared, the current MRFSS phone survey, the charter boat telephone survey, and the logbook panel survey. Currently plans are underway to evaluate these methods, with the states, NMFS, and the GSMFC compiling information for a presentation. D. VanVoorhees has contacted three qualified individuals to review the results of this study. The evaluation is planned for sometime in the April to June 1999 timeframe. The results of the evaluation will be complete no later than July, with a presentation being given to the GMFMC.

There was discussion on the precision and accuracy of the pilot study compared to the MRFSS. There are indications that the annual estimates are not statistically different, and M. Osborn suggested that the report explain in layman's terms the differences in these two methodologies and the erroneous perception that the results are the same. Several Committee members offered suggestions on how to explain the results of these two surveys, taking into consideration the

sensitivity of the issue.

D. Donaldson also reported that beginning in November 1998 the states of Louisiana, Mississippi, Alabama, and Florida had state personnel collecting MRFSS data for all three modes. M. Osborn noted that this was being done parallel to the intercept contractor through Wave 2. A final decision will be made by April 15.

### **Other Business**

M. Osborn reported that Macro is the new intercept contractor and began collecting data in Wave 2. A sole source contract was given to Quantech for Wave 1, in addition to the parallel sampling by the GSMFC. An amended telephone contract is being negotiated with final proposals due by the end of April. NMFS will be asking for a proposal from Macro for Wave 2. The contract should be in place in May, for telephoning to begin in late June.

Osborn reported that the NMFS Southeast Center has funds for biological sampling of red snapper and asked if the Gulf states would be interested. This sampling would be run separately from the MRFSS and would begin with Wave 3 through Wave 6. The Committee discussed the situation, the amount of money involved, cooperative agreements, and agreed that they would need more lead time to prepare for this project. J. O'Hop suggested trying carcass collection while doing routine sampling and then evaluate the cost.

Osborn reported that Sea Grant Intern, Kirk Gillis, a student of Bob Ditton, will be with NMFS for one year. His duties will include developing an outreach strategy and materials for the MRFSS. There will be a 15 minute video developed touching on the partnerships with the states and Commissions. This video will be available for state partners, and may include Bob Zales and another charter boat captain from the mid-Atlantic coast. Brochures are also being developed

M. Osborn requested that in the future all MRFSS data requests go directly to her.

D. Donaldson announced that the Ron Schmied Scholarship Foundation has been established and donations are being requested. For further information, contact Donaldson or Bob Ditton.

W. Laney noted that since the south Atlantic states will no longer be actively participating in FIN on a regular basis, Doug Frugé will probably be his replacement on the FIN, RecFIN, and ComFIN Committees.

**There being no further business, the meeting was adjourned at 11:40 am.**

**FISHERIES INFORMATION NETWORK  
MINUTES**

**Wednesday, April 7, 1999  
La Parguera, Puerto Rico**

Chairman Craig Lilyestrom called the meeting to order at 8:30 a.m. The following members, staff and others were present:

**Members**

Kevin Ansen, AMRD, Gulf Shores, AL  
Steven Atran, GMFMC, Tampa, FL  
Page Campbell, TPWD, Rockport, TX  
Kerwin Cuevas, (proxy for T. Van Devender), MDMR, Biloxi, MS  
Bob Dixon, NMFS, Beaufort, NC  
Michelle Kasprzak, (proxy for J. Shepard), LDWF, Baton Rouge, LA  
Jill Kelly, (proxy for J. Shepard), LDWF, Baton Rouge, LA  
Lisa Kline, ASMFC, Washington, DC  
Wilson Laney, USFWS, Raleigh, NC  
Craig Lilyestrom, PRDNER, San Juan, PR  
Ron Lukens, GSMFC, Ocean Springs, MS  
Daniel Matos, PRDNER, Mayaguez, PR  
Joe O'Hop, FDEP, St. Petersburg, FL  
Maury Osborn, NMFS, Silver Spring, MD  
William Perret, (proxy for T. Van Devender), MDMR, Biloxi, MS  
John Poffenberger, NMFS, Miami, FL  
Toby Tobias, USVI/DPNR/DFW, St. Croix, USVI  
Tom Schmidt, USNPS, Homestead, FL  
Carter Watterson, (proxy for D. Mumford), NCDMF, Morehead City, NC

**Staff**

Dave Donaldson, GSMFC, Ocean Springs, MS  
Madeleine Travis, GSMFC, Ocean Springs, MS

**Others**

Mark Alexander, CDEP, Old Lyme, CT  
Mike Cahall, ACCSP, Silver Spring, MD  
Tom Fazio, ICF Kaiser, Fairfax, VA  
Ivan Mateo, USVI/DFW, St. Croix, USVI  
Joe Moran, ACCSP, Washington, DC  
Edgardo Ojeda Serrano, UPR, Sea Grant, PR  
Ana Roman, USFWS, Boqueron, PR

**Approval of Agenda**

The agenda was adopted as presented.

### **Approval of Minutes**

The minutes from the Fisheries Information Network (FIN) meeting held on November 12, 1998 in Tampa, Florida were approved with minor editorial changes.

### **Status of the RFP for Data Collection Plan**

R. Lukens reported that the Request For Proposal (RFP) for a data collection plan was released but no proposals have been received at this time. This project was to be funded using a portion of the Gulf States Marine Fisheries Commission (GSMFC) Wallop-Breaux administrative funds. There is a sixty-four million dollar projected shortfall in Wallop-Breaux funds which would have gone to the states apportionment. In addition, there is a shortfall of eight or nine million dollars in the administrative program. The USFWS has asked the GSMFC to re-submit the 1999 budget subtracting \$45,000 from the original budget. Therefore, at this time money is not available to fund the RFP for a data collection plan. Lukens also noted that it appears there will be reduced Wallop-Breaux funding for possibly the next three years. Other possible sources of funding will be investigated in the hope that this project can then go forward.

### **Status of FIN Brochures**

D. Donaldson reported that 2,500 FIN brochures have been printed and will be distributed. Additional copies of the brochure will be available upon request. The GSMFC Commercial/Recreational Advisory Panel has reviewed the brochure and found that the information in the brochure helps to explain the program.

### **Review of the 1998 FIN Annual Report**

Copies of the 1998 FIN Annual Report were distributed to Committee members for their review prior to this meeting. D. Donaldson noted that changes that take place annually are the program activities, work group activities, and information dissemination. Donaldson also noted that the Annual Report gives an overview of the program for the past year and includes meeting minutes, the operations plan, etc. J. O'Hop and W. Laney noted that the three South Atlantic states will not be regular participants in FIN and suggested that a statement to this effect be included in the 1999 Annual Report. Following Committee discussion, **M. Osborn moved to approve the 1998 FIN Annual Report. The motion was seconded and passed unanimously.**



### **Discussion of Addendum to the FIN MOU**

D. Donaldson noted that at the last meeting there was a discussion on the integration of FIN and the Atlantic Coastal Cooperative Statistics Program (ACCSP). At that meeting it was agreed that the South Atlantic states no longer regularly attend FIN, ComFIN, and RecFIN(SE) Committee meetings, but would still have representation on the various work groups. Donaldson reported that R. Lukens and L. Kline have developed language for an addendum to the FIN MOU. L. Kline reported that this information was presented to the ACCSP Coordinating Council in December, then to the Operations Committee, and will be returned to the Coordinating Council in May. Kline noted that J. Moran has drafted a similar addendum for the ACCSP to assure that both programs are moving in the same direction.

Donaldson requested that all Committee members review the addendum. R. Lukens suggested that Committee members review the rationale and noted that this action has been discussed for several years. Lukens and Kline agreed that funding, either by FIN or ACCSP, will be available on a case by case basis for participation by South Atlantic states in the future. J. O'Hop noted Florida's unique situation, being involved in both FIN and ACCSP, and reiterated the need for coordination so that data collection activities can be carried out the same on both coasts. B. Dixon noted that membership on the FIN/ACCSP Compatibility Work Group appears to have greater representation by Atlantic states. After Committee discussion, **R. Lukens moved to replace Georgia with Texas on the FIN/ACCSP Compatibility Work Group pending approval by Georgia. The motion was seconded and passed unanimously.**

**M. Osborn moved to approve the addendum to the FIN MOU as amended. The motion was seconded and passed unanimously.** Staff will send copies of the amended addendum to Committee members.

### **Establishment of Educational Work Group**

D. Donaldson noted that the formation of this work group was recommended as a result of the facilitated session in Miami. He also noted the importance of outreach and the need for support and input from both the general public and industry. L. Kline noted that the ACCSP has had some difficulty in getting membership for their outreach committee, since many of their states do not have

public relations personnel. The ACCSP outreach committee has members from the Atlantic States Marine Fisheries Commission (ASMFC), the South Atlantic Fishery Management Council (SAFMC), and New York and New Jersey Sea Grant.

M. Kasprzak suggested contacting Ken Roberts of Louisiana State University Cooperative Extension. This office has extensive experience in working with various fishing groups. In the Caribbean, Puerto Rico has one public affairs person, and in the U.S. Virgin Islands the position is vacant, however T. Tobias recommended the Sea Grant marine advisory service. W. Laney noted that the USFWS Regional Office has an outreach staff and may have someone able to serve on the work group. Laney will contact this office and investigate. M. Osborn suggested that Committee members be sent an official letter asking them to name a member to the outreach work group. This letter should include information regarding the number of meetings and time required. J. O'Hop suggested merging the FIN and ACCSP educational outreach work groups into one group. It was noted by Committee members that since the issues are primarily the same and resources are limited this could be beneficial to both groups. Donaldson noted that this can be successful only with equal representation. In the event that a large number of members are put forth for this work group, the Administrative Subcommittee will hold a conference call to select candidates for membership.

### **Presentation of the ACCSP Data Management System**

Tom Fazio, Vice President of ICF Information Technology, Inc. gave a presentation on the ACCSP Data Management System using a live Internet connection with the ACCSP website being accessed for demonstration purposes. Fazio explained the three layers used by the ACCSP. They are the operational layer, which include the current data collection systems used by various partners. The second layer is known as the reconciliation layer, which is the centralized data warehouse, where data streams from multiple sources or partners are reconciled down to a common standard. The third layer is the informational layer, which are smaller subsets of information that users can access. Fazio also explained the prototype system design, status, and future evaluation. Cost of software licenses was also discussed. Mike Cahall of the ACCSP provided background information during the online demonstration section of the presentation. At the conclusion of this presentation, Committee members were very enthusiastic about the versatility and flexibility of this sophisticated technology and look forward to using this system in the future.

### **Presentation of Alabama Inshore Creel Survey**

K. Anson gave a presentation on the Alabama Inshore Creel Survey. Anson reported that this survey focuses on recreational boats which are launched at private boat ramps and docks and whose catch and harvest information are not covered by the Marine Recreational Fisheries Statistics Survey (MRFSS). This data was needed for the development of stock assessments for inshore species. Funds became available in the past few years through Wallop-Breaux and have allowed this survey to take place. Some limited socio-economic data was also included in this survey. Anson then explained that areas of concentration were basically from the barrier islands and north to the inshore areas of Mobile Bay. This area was then divided into the two coastal counties of Alabama, which were then further subdivided. Overflights of the area being surveyed are utilized, as well as a roving creel survey, in which state personnel interview fishermen while fishing. The results of this survey were then compared to another survey which collects catch and harvest information from fisherman utilizing public access boat ramps. Data from complete and incomplete fishing trips were analyzed and the results showed that 45% of the anglers interviewed on the water were anglers originating from private access points. Anson noted that additional data from this survey is currently being analyzed.

### **Presentation of the Use of Electronic Data Loggers for Texas Creel Survey**

P. Campbell reported on the testing of electronic data loggers being used in the Texas Creel Survey. Campbell distributed copies of the data sheets being used with the script writer in this survey and reviewed these with Committee members. Initially there were problems with the program and with the batteries, however these problems are being corrected. Texas Parks and Wildlife Department will continue to test and evaluate the script writers and no decisions have been made at this time.

### **Update and Status of Atlantic Coastal Cooperative Statistics Program**

L. Kline reported that ICF Kaiser is continuing to work on developing other modules for the ACCSP through 1999. At this point, only the commercial catch/effort module has been developed. The biological, recreational, socio-economic, and bycatch modules will be developed in the future.

The funding decision process is currently being worked on and approval from the

Coordinating Council on this process is expected in May. Kline also reported that an implementation strategy will begin shortly. J. Moran and M. Cahall will visit every state on the Atlantic coast and conduct meetings with state directors, policy makers, legislative members, technical advisors and federal partners. A pilot study is being developed to begin collecting social and economic information on commercial harvesters. This pilot study will start in the fall and that data will be fed directly to the ACCSP data management system. The state of Georgia has been provided funding and has implemented a commercial trip ticket program. M. Cahall will be working with the state of Georgia to begin moving their data into the data management system. At this time the Northeast Regional logbook and dealer data has been moved into the system and Florida will have their data in the system shortly. Kline noted that work will begin in the fall on coordinated permitting systems and suggested coordinating this effort with the FIN. M. Osborn noted that the contract for continued support will be going out for competitive bid.

#### **Update on the Vessel Registration System/Fishery Information System**

M. Osborn stated that a report outlining the regional implementation of a national Vessel Registration System (VRS)/Fishery Information System (FIS) was finalized and sent to Congress. Also included in this report are the Caribbean, Western Pacific, and Alaska. At this point it appears that the monies indicated in the report are not included in the President's budget. NMFS personnel have been meeting with Congressional staffers on this issue.

J. Poffenberger noted that the U.S. Coast Guard (USCG) is still in the process of completing the Vessel Information System (VIS) prototype with two states. The VIS is not quite ready for other states to begin participation in the program, however, Poffenberger noted the importance of having the states prepared to move into this system and participate when the USCG is ready. As new information becomes available, he will relay this to all partners.

R. Lukens questioned whether the decision had already been made to use the VIS as the model for use with the individual states and the USCG. Osborn and Poffenberger responded that it had. Lukens and Poffenberger suggested that it would be helpful to have someone give a presentation on the structure and function of the VIS program at the next FIN meeting. L. Kline suggested inviting someone from Massachusetts since they have been involved in this pilot program. Lukens expressed concern that the state boating programs and the USCG are not structured to create

a fisheries vessel database. Poffenberger agreed that the VIS was not intended to be a fisheries database, but a documentation of all boats. After discussion on the pros and cons of this system, the Committee agreed that it would be beneficial to have a presentation on the VIS system at the next FIN meeting. M. Osborn will contact T. Fazio and request that he demonstrate how the information management system will link permits with landings with VRS/VIS. Osborn will also contact representatives from the USCG and the state of Massachusetts and request that they give a presentation to the Committee.

D. Donaldson noted that L. Kline reported to the Committee that the ACCSP was preparing to develop a permitting system and this would be an opportune subject for coordination with the FIN. After Committee discussion, it was agreed that Donaldson will draft a letter for distribution to Committee members asking for suggestions for membership on this Work Group. J. O'Hop suggested that members on the Permitting Work Group be actively involved in permitting systems since the integration of landings and permitting is critical in this issue.

#### **Discussion of Priorities for FY 1999 Funds**

R. Lukens provided the Committee with some background on the funding and Congressional language, indicating that as a result of the 1999 Congressional appropriations process, a new line item was added to the National Marine Fisheries Service (NMFS) budget. That line item is called *GulfFIN*. Lukens indicated that the line item name simply identifies the funding and does not indicate a change in the name of the program which is the Fisheries Information Network (FIN). Lukens pointed out that the line item provides \$3.0 million for 1999 and added that the assumption is that Congress intends to continue to provide funding for the program since they went to the trouble of establishing a new line item.

Lukens reminded the Committee that the availability of the funding was discovered just prior to the last FIN meeting, held in Tampa, Florida during November 1998. A full discussion of funding issues was not scheduled for that meeting, because it wasn't known in advance that the funding would be available. However, upon request, an *ad hoc* discussion of funding issues took place during the ComFIN session of that meeting. The GSMFC staff had compiled a preliminary list of suggested items for funding, and the items on that list were discussed. The conclusion of that discussion was that the FIN needed to develop a process by which funding priorities can be

discussed and recommendations made by the FIN Committee. There was general agreement on that point.

Lukens informed the Committee that an in-depth discussion of funding priorities was held during the State-Federal Fisheries Management Committee at the March 1999 meeting of the GSMFC. Included in that discussion were the five Gulf State Directors, Doug Frugè (U.S. Fish and Wildlife Service), Dr. Mark Holliday (NMFS HQ Statistics Office), Dr. Andy Kemmerer (NMFS Southeast Regional Administrator), and Dr. Brad Brown (NMFS Southeast Fisheries Science Center Director). The list of suggested items, discussed above, was provided to the individuals at that meeting. In addition to the items already on the list, several of the participants added items. The meeting resulted in a recommendation; however, Lukens pointed out that the group requested that the FIN Committee consider and discuss the items and provide feedback for a follow-up meeting, to be scheduled in early May.

Lukens pointed out that the Gulf States, through coordination and administration of the GSMFC, are conducting the recreational fisheries survey in the Gulf of Mexico, as of January 1, 1999. He indicated that the funding for the survey has already been obligated at around \$2.2 million, and that that amount would have to be deducted from the total available funds to determine the level of funding available for the items on the list. The list represents suggested items only, except that the Gulf State Directors and the individuals listed above have already discussed and generally accepted the items, pending recommendations from the FIN, and that items could be added by the FIN Committee. Further, the list represents activities that have been identified in documentation of the proceedings of RecFIN and ComFIN, and so are consistent with existing recommendations. Lukens then recommended that the Committee take each item on the list individually, discuss what the items mean, and discuss the general level of funding estimated for the items. At this point, Lukens suggested adding an item to the list based on discussions with the State of Texas. He indicated that at the March meeting, Texas indicated that they didn't feel they had the staff time to pursue full trip ticket development; consequently, they withdrew from the list. Since that time, they have determined that they would like to pursue a portion of the activities in preparation for implementation, and Page Campbell (Texas) would provide the details later.

M. Osborn characterized that the original list of items submitted to the March meeting attendees was comprised of items taken from the FIN documentation, and that the additional items

were added by individuals at the meeting. She indicated that the Committee should think in terms of long-term needs and strategies, for example providing seed money for capitol expenditures and improvements, such as gearing up for the Trip Ticket Systems. She suggested not using money to replace money already in place, expressing a concern that if that precedent is set, partners may take the money previously committed to the program and spend it elsewhere. In that case the total amount of funding available could decrease. She pointed out that the institution of Trip Ticket Systems in the Gulf would overlap other data collection activities, such as log books and the Cooperative Statistics Program, and posed the question of what should be done to avoid such duplication of effort. Can that effort be redirected to other priority items for data collection? She reiterated the need to develop a funding priority process for future years' funding. She asked if the *GulfFIN* line item included funding for the Caribbean or other partners outside the Gulf of Mexico region? Lukens answered no, indicating that the language is clear that the funding is for the Gulf portion of the program and includes funding for the states and the GSMFC only. Osborn expressed concern that if the NMFS cannot have any of the funds that they are, in effect, disenfranchised from the program, and what does that mean in terms of partnerships. She asked that Lukens address her questions. O'Hop also asked Lukens to explain when the funding must be committed or obligated.

Lukens responded, describing the funding process in general terms. He pointed out that the interstate marine fisheries commissions have for many years been working together to support increased funding for data programs, focusing on dedicated funding for conducting the state-federal cooperative programs developed or being developed on each coast, including PacFIN, RecFIN, ComFIN, and ACCSP. He then reiterated that the Congressional language specifies that the funding is for the Gulf and represents the state and GSMFC needs. Lukens stressed that the dedication of funding to the Gulf doesn't constitute disenfranchisement of any partners, stating that the funding process through the Congress is most effective when working with the legislative representatives of the states in a particular region, and that any resulting funding will be dedicated to support programs in that region. Lukens pointed out that the GSMFC had asked for \$3.0 million for recreational data work and \$4.0 million for commercial data work. The Congress provided \$3.0 million total and included recreational and commercial data work in the language. As in years past, the Congressional language also included a three-way split of the \$3.9 million line item of *Recreational Fish Harvest Monitoring*. Lukens was asked to explain that line item. He indicated that the *Recreational Fish*

*Harvest Monitoring* line item is used to fund the Marine Recreational Fisheries Statistics Survey (MRFSS), and for the past four or five years has included language to split the \$3.9 million three ways among the Gulf, Atlantic, and Pacific States to implement RecFIN. He further explained how several items are taken off the top of the \$3.9 million. Osborn indicated that it is the NMFS position that the only money that is available is the \$3.0 million from the *GulfFIN* line item, minus a 5% NOAA tax, minus the \$2.2 million for the recreational survey, leaving approximately \$600 thousand. Lukens indicated that Osborn's figure is incorrect. Lukens was then asked to describe, in detail how the funding breaks out. The following provides that information:

**Recreational Fish Harvest Monitoring Line Item**

\$3,900,000.00 Total

- 195,000.00 NOAA Tax (5%)
- 500,000.00 South Carolina Red Drum Project
- 500,000.00 Economic Add-on

**\$2,705,000.00** Revised Total

This figure is divided by three, as per the Congressional Committee language.

- \$901,666.66 Amount available for Gulf of Mexico
- 250,000.00 Telephone survey for Gulf of Mexico
- \$651,666.66** Total available from this line item to GSMFC and states for RecFIN

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***GulfFIN* Line Item**

\$3,000,000.00

- 150,000.00 NOAA Tax (5%)

**\$2,850,000.00** Total available from this line item to GSMFC and states for other projects

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**Combined Line Items**

<b>\$2,850,000.00</b>	<i>GulfFIN</i> Line Item
<b>+651,666.66</b>	Recreational Fish Harvest Monitoring Line Item
<b>\$3,501,666.66</b>	Total available to GSMFC and states for data program

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**Funding for Cooperative Agreements**

<b>\$3,501,666.66</b>	Total available funds
<b>-2,222,042.00</b>	Obligated for 1999 for RecFIN
<b>\$1,279,624.66</b>	Total available for next cooperative agreement

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Osborn provided her thoughts regarding the time line for making the funding available. She indicated that the NMFS will be trying to get the funding obligated as an amendment to the cooperative agreement that is already in place to conduct the recreational survey in the Gulf of Mexico. She indicated that it normally takes 60 days to process a cooperative agreement, but that they sometimes can be expedited to as little as 45 days. The funding must be made available to the Gulf States and the GSMFC no later than September 30, 1999 since that is the end of the fiscal year, and funds not obligated by that time go back to the general treasury. However, Lukens pointed out that that time frame is too late. Osborn agreed, indicating that an early June submission was a better time frame, and Lukens indicated that a July 1 start date was the best target. A July 1 start date would require a submission of around May 1. It was pointed out that if such an accelerated time frame were to be successful, the states would have to work very quickly to develop statements of work and budgets. Lukens strongly asked that any budgets developed by the states be reviewed and approved by the State Directors before they are sent to the GSMFC office. Everyone agreed.

Lukens suggested that the Committee discuss each item on the list individually, describing in detail what the item is and how much it would cost, in general terms. The following discussion ensued:

### **Compile “for-hire” vessel frame for Texas**

The ongoing charter boat pilot survey employs a vessel frame for all charter vessels operating in Louisiana, Mississippi, Alabama, and Florida (Gulf). In anticipation of and preparation for expanding the charter boat survey to include the State of Texas, this activity will provide funding for the Texas Parks and Wildlife Department to compile a “for-hire” vessel frame for Texas. This is a labor intensive activity and will require a dedicated staff person. It will be scheduled for 12 months, but may take less time to complete. The estimated cost for this activity is \$50,000.00. A suggestion was made that the experience of the GSMFC and Florida may be useful to the State of Texas in compiling the vessel frame. Donaldson indicated that the GSMFC office will be providing information to Texas regarding how the original vessel frame was compiled and all the sources of information that were used to identify vessels for inclusion in the frame.

### **Compile “for-hire” vessel frame for the Florida east coast**

The ongoing charter boat pilot survey employs a vessel frame for all charter vessels operating in Louisiana, Mississippi, Alabama, and Florida (Gulf). In anticipation of and preparation for expanding the charter boat survey to include the Florida east coast, this activity will provide funding for the Florida Department of Environmental Protection (FDEP) to compile a “for-hire” sampling frame for the Florida east coast. The FDEP staff has had experience in this activity as a result of compiling the charter boat vessel frame for the Florida west coast. In addition, some of the work has already been done. This activity will be scheduled for 12 months, but may take less time to complete. The estimated cost for completing this activity is \$4,000.00. The question was asked if *GulfFIN* funds could be spent on a Florida east coast activity. Lukens responded that in an effort to keep from splitting Florida between two coordination programs, the Gulf determined that Florida recreational survey activities would be coordinated by the GSMFC and Florida commercial data activities would be coordinated by the ACCSP.

### **The FIN data management system**

In keeping with the stated position of having the GSMFC serve as the marine fisheries data management center for the Gulf of Mexico, the GSMFC will make computer hardware and software purchases to establish a data management system in the GSMFC office to handle the commercial

fisheries data collected under the Gulf Fisheries Information Network. This will include a commercial data server, Oracle database management software, and appropriate licensing. This will be scheduled as a 12 month activity. The estimated cost for this activity is \$300,000.00.

Osborn asked why the GSMFC is proposing to do this activity when there was a cooperative agreement in 1997 to purchase servers and software under the transition activities. Lukens responded that the GSMFC had proposed to purchase another server for the commercial data, but the NMFS denied that item, saying that it was not necessary in the transition activities. She questioned why there needs to be separate computer systems for commercial and recreational programs. Lukens responded that the best advice that the GSMFC had been given indicated that if separate operating systems were going to be used, it is best to use separate servers. In this case, the recreational server is a SAS-based environment and the commercial server will be an Oracle environment. The experience of the Pacific coast in managing similar systems is that it is better to keep the servers separate. In this case the servers would be separate, but would be components of the GSMFC network. The question was asked if the software proposed included the utility software presented by ICF/Kaiser earlier in the meeting. Lukens indicated that it did not. Poffenberger indicated that it would be important at some point to determine what the division of labor of the proposed activity would entail, including warehousing, data collection, data management, etc. He indicated that the NMFS facility in Miami has the capacity to provide the data management function and has served as the repository of the landings statistics for the Southeast Region. He pointed out that this activity may be a duplication of effort. He asked that if the GSMFC is going to house/warehouse the data for the Gulf of Mexico, what will happen to the system in Miami? Wouldn't it be less expensive to house/warehouse the data in Miami and increase the staffing there, or conduct data management remotely? The discussion continued to explore the question of duplication of effort regarding this activity. Poffenberger stressed again that if this activity is pursued, there needs to be a concerted effort to determine how it would affect the operations at the NMFS Miami facility. Osborn indicated that the ACCSP spent several years determining what the architecture should look like for the ACCSP system, and that it would be a centralized warehouse system. She pointed out that the FIN has not yet determined what the FIN data management system architecture should look like. Lukens responded that the GSMFC believes that there are institutional reasons for the GSMFC to house and staff the system, and that efficiencies will be realized in serving

the constituency by having the data management system housed in the GSMFC office. He indicated that the Gulf States have gone on record through letters indicating their preference for having the system located at and staffed by the GSMFC. The GSMFC is a neutral entity, in that there is no regulatory authority, and will have dedicated staff whose only job will be to monitor and manage the system. Osborn stated that the decision to house and staff the data management system in the GSMFC office was made by the Gulf States and the GSMFC and did not involve any discussion or input from the federal partners, and she feels that the NMFS has been disenfranchised from the process. Perret explained that there have been several opportunities for the NMFS to enter into discussion regarding this issue, but Osborn countered that the policy decision was already made without that input. Lukens agreed with Perret that the NMFS directorate had the opportunity to discuss the issue at the March meeting of the State-Federal Fisheries Management Committee, described above, and that he felt that the issue was agreed to. Osborn indicated that she understood that that meeting did not result in any agreement. She expressed her dismay that the Gulf representatives of the FIN met behind closed doors, made decisions, and communicated those to the NMFS as a *fait accompli*. Lukens responded that it was clear to the participants at the March meeting that that was the time to discuss these items and determine if there were any objections. He indicated that there was not any extended discussion of this item at that meeting, and that no one openly objected to its inclusion on the list. Indeed, there was general acceptance of the list as presented, with the only substantive discussion being the inclusion of additional items, as discussed below. Osborn disagreed with Lukens position. Poffenberger asked if the meeting minutes from the March meeting are available, and Lukens indicated that they were not done. He stated that the GSMFC will make those minutes available to everyone as soon as they are complete. Osborn followed by saying that the issues begin as private discussion on the side, not including the other partners. Perret indicated that on many occasions decisions have been made by the NMFS without consultation with the states, and the states are forced to live with those decisions. O'Hop suggested that perhaps an alternative could be considered, by establishing a temporary location at the Miami center. Lukens responded that it doesn't make any sense to delay the decision, when it would have to be made at some time anyway. He stressed that the strategy is to use the initial year(s) of funding to make equipment and infrastructural purchases, because later in the program, when funding is tied directly to data collection and other staff activities, it will be more difficult to find the funding to

make those kind of purchases. Osborn asked if the data management system architecture had already been decided. Donaldson responded that at the last FIN meeting it was decided to adopt the ACCSP data management system, since the program is striving to maintain compatibility. Responding to Osborn's earlier comments regarding the decision on this issue by the Gulf States and the GSMFC, Lukens stated that the Gulf States represent the Gulf Regional Subcommittee of the FIN, and it is perfectly reasonable for that group to discuss the items of importance to the Gulf of Mexico, within the context of the regional program, to make plans for actions that will achieve what the Gulf States believes they need, and to establish policies based on those deliberations. In addition, the Gulf region has been successful in getting funding to support the actions and policies that have been established, and that is a good thing. Lukens emphasized that this item is high priority for the Gulf States and the GSMFC, it relates to the Gulf of Mexico region only, and it does not impinge on anyone else's ability to continue their work. Schmidt indicated that he agreed that the item is duplicative and agrees with the NMFS representatives. The question was asked if the GSMFC would receive \$300 thousand each year for this activity. Lukens explained that the costs reflect startup needs only. Ongoing costs have not yet been worked out, but they are not reflected in the \$300 thousand figure.

The discussion then turned to the need to integrate ongoing activities into the plans as outlined. There was general agreement that everyone needs to understand the impact on ongoing activities when the proposed activities are implemented. Dixon agreed, saying that he is concerned that there could be duplicative data collection, and that not enough detail has been provided on the items, particularly the data management system proposal. Lukens responded by saying that the time line since Congress made the funding available and the time that the cooperative agreement to obligate the funding needs to be in place has precluded establishing the kinds of details requested. Lukens pointed out that even after getting the cooperative agreement in place, it will be near the end of the year before any action will be taken on this item. There should be time in the interim to determine to some degree how to integrate the proposed actions. Dixon stressed that he perceived this item as being duplicative and possibly a waste of money. Discussion continued regarding this issue; however, there was no consensus on this issue.

### **ComFIN data management prototype for Louisiana**

The Atlantic Coast Cooperative Statistics Program (ACCSP) under development on the Atlantic coast is nearing completion of a regional database management system, and has established a prototype interface between the system and the data collection activities of the Northeast Region and Florida's Trip Ticket System. In an effort to avoid duplication of effort, the FIN agreed to adopt the data management system developed by the ACCSP, assuming the prototype project was successful. Recent results are positive, and this activity proposes to adapt the ACCSP data management system for integration of the Louisiana Trip Ticket System data and the FIN data management system. In addition, this activity will provide for the completion of a metadata module, an important component of the overall data management system. This module will provide the information necessary for interpretation of the data in the system. This will be scheduled as a 12 month activity. The estimated cost for this activity is \$105,000.00.

Osborn asked if Louisiana already has their data going into a data management system in the state. The answer was yes, and that this item is to reconcile Louisiana's data to the regional FIN data management system. Louisiana is already entering their data. She asked if it includes hardware, and the answer was no. There will be software purchases and licensing costs. She indicated that, in her experience, the cost estimate seems high, but she basically agreed with the need for the item. She asked if the GSMFC plans to issue the contract with ICF/Kaiser, and if so will the GSMFC take an overhead cost. Lukens explained that the GSMFC will manage the contract with ICF/Kaiser, but that office costs to oversee that project will be minimal. The GSMFC does not have an established overhead percentage, but works off a cost reimbursable arrangement. Most of the administrative costs are born by the administrative portion of the cooperative agreement and will likely not affect the contract. Poffenberger asked about Louisiana's involvement in this item, and Lukens indicated that J. Shepard was fully aware of and supportive of the project. Osborn asked what kind of system the Louisiana program is using. Kasprzak indicated that it is a SAS database.

### **Trip Ticket System development - Mississippi**

In keeping with the established goal of implementation of Trip Tickets Systems throughout the Gulf of Mexico, this activity will provide funding to the Mississippi Department of Marine Resources to conduct activities in preparation for implementing a Trip Ticket System. Those

activities include but are not limited to

- hardware/software purchases (including installation and configuration costs)
- identification of seafood dealers in the state (including traditional dealers, restaurants, and fishermen who sell their catch directly to the public)
- investigation into implementing a seafood dealer's license
- installation of the database management system
- outreach to dealers
- development of trip ticket forms

This will be scheduled as a 12 month activity. The estimated cost for this activity is \$250,000.00. Osborn asked if the states already have the regulatory authority to implement the systems, and the answer was yes. She asked if the costs reflected production of the forms and possibly purchasing scanning equipment for data entry, such as in Louisiana. Lukens indicated that those details have not yet been determined. Watterson asked if there had been any discussion regarding a state match for annual support of the Trip Ticket Systems. Lukens indicated that this issue has arisen, but no resolution has been reached. He cautioned that getting funds from the state dedicated to such a program can be difficult, because it likely will require acts of the legislatures. It was pointed out that the Louisiana Trip Ticket System was originally proposed before the legislature in 1989, and funding to support it was not forthcoming until 1999. Osborn asked if the Louisiana system provides for every landing that occurs in Louisiana, regardless of where it was caught. She was concerned that there could be duplicative reporting. It was explained that the Trip Ticket System records the first point of sale. If a product moves from one state to another, the first transaction is the one that is recorded. Kelly indicated that if a truck were to be loaded at the dock for transport to another state, the trucking company would need a wholesale dealer's license in order to be able to transport it. In that case the harvest would be recorded. Dixon asked what the timeframe for completing these projects is. Lukens responded that, for planning purposes, it is assumed that most of the items could be completed within a 12 month period of time, some perhaps sooner. However, Osborn noted that if projects are not completed within a 12 month period, no cost extensions can be granted for completion.

### **Trip Ticket System development - Alabama**

In keeping with the established goal of implementation of Trip Tickets Systems throughout the Gulf of Mexico, this activity will provide funding to the Alabama Department of Conservation and Natural Resources/Marine Resources Division to conduct activities in preparation for implementing a Trip Ticket System. Those activities include but are not limited to

- hardware/software purchases (including installation and configuration costs)
- identification of seafood dealers in the state (including traditional dealers, restaurants, and fishermen who sell their catch directly to the public)
- investigation into implementing a seafood dealer's license
- installation of the database management system
- outreach to dealers
- development of trip ticket forms

This will be scheduled as a 12 month activity. The estimated cost for this activity is \$250,000.00. In the Committee meeting, the discussion included Mississippi and Alabama together. Comments above are pertinent to Alabama's effort to develop a Trip Ticket System.

### **Trip Ticket System development - Texas**

In keeping with the established goal of implementation of Trip Tickets Systems throughout the Gulf of Mexico, this activity will provide funding to the Texas Parks and Wildlife Department (TPWD) to conduct activities in preparation for implementing a Trip Ticket System. While those activities include the following list, the TPWD proposes to conduct a small subset of the list, to be identified, because they do not have adequate staff time available during the upcoming months to dedicate to this entire task.

- hardware/software purchases (including installation and configuration costs)
- identification of seafood dealers in the state (including traditional dealers, restaurants, and fishermen who sell their catch directly to the public)
- investigation into implementing a seafood dealer's license
- installation of the database management system
- outreach to dealers
- development of trip ticket forms, or modification of current cash sales ticket



Osborn asked if Texas will be looking a new technologies for the Trip Ticket System. Campbell indicated that the state has a point-of-sale system for recreational fishing licenses, and they will be considering a system like that for the trip tickets. This will be scheduled as a 12 month activity. The estimated cost for this activity is \$100,000.00.

### **Menhaden Sampling**

Currently menhaden are being sampled to support stock assessment and trend analyses. Lukens indicated that the funding for the sampling has been provided from the NMFS to the GSMFC to hire and administer the samplers. The NMFS indicated that funding to support that activity would not be available beyond the current agreement, and asked the GSMFC to include the activity in the Cooperative Agreement. There was general conceptual agreement with this request.

Osborn expressed her concern that by including activities such as menhaden sampling in the new funding initiative, a precedent is being set for everyone to come to the table and ask for funding to support their ongoing activities. Some discussion ensued regarding this issue. It was pointed out, however, that menhaden sampling is currently funded through the end of December 1999; consequently, there will be no need to include this activity in the Cooperative Agreement for FY 1999 funds.

### **Gulf of Mexico Head Boat Sampling**

Currently, head boats in the Gulf of Mexico are sampled for fish lengths, weights, and otoliths (perhaps other biological sampling) through dockside sampling of the catch. Catch and effort are acquired through logbooks. For the past several years, the National Marine Fisheries Service (NMFS) has been providing funds to hire the dockside samplers through the GSMFC. This item does not include the log book portion of the program. That funding has not been designated in the budget over the years, and as a result, it is likely that the funding will not be available past the current agreement, ending September 30, 1999. Because these data are vital to the current stock analysis and management decision processes, this activity will support the head boat dockside sampling from October 1, 1999 through December 31, 1999.

With the conduct of the charter boat pilot survey, preliminary data being favorable to the methodology, there is an interest in developing alternatives to sampling the catch and effort in the head boat fishery, in particular the pilot captain's phone call methodology. This activity has already

begun through discussions of the Recreational Fisheries Information Network Committee, and costs to support it will be born by the administrative segment of the FIN program. The cost to conduct the dockside head boat sampling from October through December is \$34,000.00.

Atran pointed out the Gulf Council staff will likely be recommending a mandatory log book system for charter and head boats at an upcoming Council meeting. Dixon pointed out that log books for head boats are currently mandatory; however, it is not enforced, and there is currently only about 80 - 85% compliance with the log books. Discussion ensued regarding the idea of developing alternate methodologies to sample the head boat fishery. Dixon recalled that the ACCSP is currently planning to conduct a pilot study in South Carolina, much like the pilot study that was conducted in the Gulf. He agreed with the concept that a study should be done to compare methodologies before any change to the program would take place.

**R. Lukens moved that the FIN Committee establish a work group of the RecFIN Committee to address alternate methodologies for sampling the head boat fishery, including catch, effort, and biological sampling, and to begin work group effort as soon as the work group members are identified. The motion was seconded.** Lukens pointed out that the work group activity, if approved, would be funded through the existing administrative portion of the program, not from the funds currently being addressed. Osborn asked how the activity would fit into the RecFIN priorities. Lukens responded that surveying and sampling the for-hire fisheries is a high priority within RecFIN, and the activity would simply be an extension of the pilot charter boat survey. Lukens suggested that the Administrative Subcommittee meet via conference call and discuss the formation of the work group and develop a formal charge to that work group. **The motion passed with the GMFMC and the NPS abstaining.** Osborn pointed out that there needs to be better communication between the FIN and its activities and the Gulf Council, in light of the information provided by Atran. The Committee agreed, and GSMFC staff indicated that they were already working with Dr. Richard Leard to periodically have time on the Council's agenda for FIN presentations. The Committee encouraged staff to continue, and even increase, that activity.

Lukens pointed out that the participants at the State-Federal Fisheries Management Committee work session in March in New Orleans asked for clarification of the impacts of implementing Trip Ticket Systems in the states on existing activities, such as the Cooperative Statistics Program. He indicated that there was not time during the FIN Committee meeting to do

that; however, there will be considerable time between the start of the Cooperative Agreement activities and implementation of any new Trip Ticket Systems to fully consider all impacts of new activities on ongoing activities.

There ensued a general discussion regarding the need for additional funding for Caribbean programs. There were differing perspectives on the disposition of funding and how funding is secured for programs. T. Tobias, USVI, expressed his concern and disappointment that funding through *GulfFIN* will not be available to the Caribbean. He indicated that his understanding was that any new funding would be available to all partners in the program. He stressed that the Caribbean components of the program had been participating for many years in the State-Federal Cooperative Statistics Program and then the FIN, and was under the impression that such participation would result in additional funding for the Caribbean. Lukens responded, indicating that the GSMFC has had a long history of interfacing between the states and the Congress to gain support for new and ongoing programs, but it would be difficult for the GSMFC to directly interface with the Congress for funding to support Caribbean activities. The FIN can work cooperatively to establish program plans and funding strategies, but the individual components of the program have to use the political resources at their disposal to attempt to secure funding for program activities. All Committee members agreed that the Caribbean needs additional funding to be able to establish the range of data collection and management activities that are needed.

### **Florida Trip Ticket System updating**

Florida was the first state in the Gulf of Mexico to establish a Trip Ticket System, implemented several years ago. There is a need to convert Florida saltwater license and permit database software from its current database management system to Oracle. This will require considerable effort, and this activity will support completing a portion of the effort. They need to convert to Oracle is based on using Oracle as the overall, regional database management system. This is a 12 month activity. The estimated cost of this activity is \$150,000.00. Osborn brought up the issue of commercial data for Florida being administered and coordinated by the ACCSP, indicating that use of these funds would be inconsistent with that policy decision. Lukens pointed out that the policy decision is related to coordination and administration of program activities only. Osborn continued to object to the funding; although, she felt the activity is necessary.

### **Biological sampling in the Gulf of Mexico**

During recent years, additional biological samples, including lengths, weights, and otoliths, have been collected to support the call for more reliable stock assessments, particularly for red snapper. The activity will also continue to support sampling in the shrimp fishery for effort and fishing area. This information is critical for estimating shrimp trawl bycatch. This funding has not been designated in the NMFS budget, and as a result, will not be available beyond the current project period ending July 31, 1999. This activity will begin August 1, 1999, and could be supported by FY 1999 funds through July 31, 2000 or could be supported by FY 1999 funds through December 31, 1999, and continued using FY 2000 funds. The estimated cost of this activity is \$160,000.00 for funding through July 31, 2000, or \$80,000.00 for funding through December 31, 1999.

There was a discussion regarding the difference between the Trip Ticket Systems and the need to continue shrimp sampling. Poffenberger indicated that this constitutes a difference between the FIN and the ACCSP regarding the trip tickets. He stated that for FIN the trip tickets will establish a sampling universe from which to sample for effort. In the ACCSP, the trip tickets will provide effort. Donaldson indicated that that approach was for Louisiana only, and that other states that establish Trip Ticket Systems may be able to collect all the information via a trip ticket. Watterson suggested from North Carolina's perspective that the trip ticket is not the best way to get effort information. He stated that it has been tried and did not work well. Campbell added that port agents spend a lot of time getting landings information. If the landings are collected from the trip tickets, it will free up the port agents to do more shrimp interviews.

### **Examine Quota Monitoring Options**

Lukens pointed out that this activity is a request from the participants in the March State-Federal Fisheries Management Committee session for the FIN Committee to begin investigating options to conduct quota monitoring. A concern was expressed at that meeting that the Gulf-wide implementation of Trip Ticket Systems may cause some people to suggest using those systems for quota monitoring, and those programs will not be designed to nor adequate for quota monitoring. Lukens explained that this activity would be handled under the administrative portion of the program and will not require funding from the funds currently under discussion.

### **Reconciling Texas recreational fishing data and Beaufort Head boat data to Oracle format**

The NMFS is currently in the process of converting all the MRFSS recreational fisheries data files into Oracle format. Since the Texas recreational survey data are not housed in the NMFS database management system, the current plan is that the NMFS will not be converting Texas data. This activity will support the conversion of Texas data to the Oracle format and provide the vehicle for continuous conversion, as Texas data are collected. An effort will also be made to reconcile the Beaufort head boat data into Oracle. This is a 12 month activity. The estimated cost of this activity is \$50,000.00.

### **Trip Intercepts Module Development**

Campbell suggested adding the development of a module for trip intercepts. Texas is currently conducting some commercial trip intercepts from the inshore shrimp fishery, and she is suggesting a module be developed to handle shrimp intercept data. Osborn indicated that modules currently planned would likely capture the data Campbell mentioned. No action was taken on that suggestion.

The total for activities discussed above is **\$1,453,000.00** if biological sampling is supported through July 31, 2000 or **\$1,373,000.00** if that activity is supported through December 31, 1999.

### **Recommendation**

The Committee considered the items that were discussed and determined the following prioritization:

- For-hire vessel frame development - Texas High
- For-hire vessel frame development - Florida East Coast High
- FIN Data Management System Development High
- Data Management Prototype - Louisiana High
- Trip Ticket System - Mississippi High
- Trip Ticket System - Alabama High
- Trip Ticket System - Texas High
- Head boat Sampling Medium
- Biological/Shrimp Trip Sampling Medium
- Trip Ticket System Upgrade - Florida Low
- Texas Recreational and Beaufort Head boat Data Reconciliation Low

Again, there was considerable discussion regarding the FIN Data Management System proposed for the GSMFC office. The decision was to leave it in the High category, but to indicate that there was considerable disagreement, and no final resolution of the issue was reached. The system itself is a high priority, the location and staffing of the system is the issue in question.

Donaldson indicated that each agency responsible for items in the funding priority list will be responsible for development a statement of work and a budget for each item. Those items should be sent to Donaldson by April 23, 1999. **M. Osborn moved to adopt the list and priorities above. The motion was seconded.** The question was asked what information would be presented to the State Directors and the NMFS Directorate. It was pointed out that the prioritized list, statements of work, and budgets would be presented. Lukens also indicated that a report based on the Committee's discussions would be presented. **The motion passed with the U.S. Virgin Islands opposed, and the ASMFC and North Carolina abstaining.**

**M. Osborn moved to develop a funding decision process, based on the model developed by the ACCSP, at the next FIN meeting.** Lukens pointed out that the Cooperative Agreement for FY 2000 funds will have to be submitted to the NMFS by September 1, 1999. That would not give the Committee time to develop the decision process prior to that taking place. Osborn suggested that such discussions could take place via telephone conference calls. **The motion was seconded and passed with U.S. Virgin Islands abstaining.**

#### **Time Schedule and Location for Next Meeting**

Committee members agreed that the next meeting would be held in Tampa, Florida the week of either September 21, 1999 or October 4, 1999.

**There being no further business, the meeting was adjourned at 6:05 pm.**

**APPROVED BY:**

  
**COMMITTEE CHAIRMAN**

**COMMERCIAL FISHERIES INFORMATION NETWORK (ComFIN)  
MINUTES**

**La Parguera, Puerto Rico  
Thursday, April 8, 1999`**

Chairman, Daniel Matos, called the meeting to order at 8:30a.m. The following members, staff, and others were present:

**Members**

Kevin Anson, AMRD, Gulf Shores, AL  
Steven Atran, GMFMC, Tampa, FL  
Page Campbell, TPWD, Rockport, TX  
Graciela Garcia-Moliner, CFMC, San Juan, PR  
Michelle Kasprzak, (proxy for J. Shepard), LDWF, Baton Rouge, LA  
Lisa Kline, ASMFC, Washington, DC  
Wilson Laney, USFWS, Raleigh, NC  
Ron Lukens, GSMFC, Ocean Springs, MS  
Daniel Matos, PRDNER, Mayaguez, PR  
Joe O'Hop, FDEP, St. Petersburg, FL  
Corky Perret, (proxy for T. VanDevender), MDMR, Biloxi, MS  
John Poffenberger, NMFS, Miami, FL  
Tom Schmidt, NPS, Homestead, FL  
Toby Tobias, USVIDPNR, Frederiksted, St. Croix, USVI  
Carter Watterson, (proxy for D. Lupton), NCDMF, Morehead City, NC

**Others**

Mark Alexander, CTDEP, Old Lyme, CT  
Mike Cahall, ACCSP, Silver Spring, MD  
Kerwin Cuevas, MDMR, Biloxi, MS  
Bob Dixon, NMFS, Beaufort, NC  
Jill Kelly, LDWF, Baton Rouge, LA  
Ivan Mateo, USVIDPNR, Frederiksted, St. Croix, USVI  
Joe Moran, ACCSP, Washington, DC  
Edgardo Ojeda, PR Sea Grant, Puerto Rico  
Maury Osborn, NMFS, Silver Spring, MD

**Staff**

Dave Donaldson, GSMFC, Ocean Springs, MS  
Madeleine Travis, GSMFC, Ocean Springs, MS

**Approval of Agenda**

The agenda was approved as amended.

### **Approval of Minutes**

The minutes of the meeting held on November 12 and 13, 1998 in Tampa, Florida were approved as written.

### **Time Line for Funding**

D. Donaldson reported that as a result of the discussion on funding issues during the FIN meeting several tasks were developed, however deadlines were not discussed. Committee members will be responsible for statements of work as follows:

Page Campbell	Charter boat frame in Texas
Joe O'Hop	Charter boat frame in east Florida
Dave Donaldson	Hardware/software and ComFIN prototype
Kerwin Cuevas	Trip ticket program in Mississippi
Kevin Anson	Trip ticket program in Alabama
Page Campbell	Trip ticket program in Texas
Bob Dixon	Head boat and menhaden
Joe O'Hop	Update Florida trip ticket program
John Poffenberger	Biological Sampling
Maury Osborn	Catch/effort data and integration of head boat data

Statements of work on these projects are due to D. Donaldson on April 23, 1999.

### **Review of List of Personnel with Access to Confidential Data**

J. Poffenberger distributed the list of personnel with access to confidential data and asked that anyone having changes, needing access, or an account, contact Ken Zinniger or Poffenberger.

### **Discussion of Upcoming Meetings**

D. Donaldson reviewed the schedule of upcoming meetings with Committee members.

The Social/Economic Work Group is tentatively scheduled to meet on June 15, 1999 in Miami, Florida and has been tasked with developing a mail survey section for the QA/QC document.

The FIN/ACCSP Compatibility Work Group is meeting May 11, 1999 and will be addressing the similarities in the two programs. Since this work group will be meeting annually, standard



operating procedures will be established at this meeting, as well as discussions about data management systems, quota monitoring, etc.

The regional port samplers will meet from July 20 to 22, 1999 in Tampa, Florida. The samplers met last year and agreed that the meeting was very productive and beneficial. There was Committee discussion on having a jack identification workshop at the upcoming port samplers meeting, and J. O'Hop agreed to supply the fish and personnel for conducting this workshop. D.Matos requested holding a port samplers meeting for agents in Puerto Rico and the U.S. Virgin Islands. D. Donaldson will coordinate with D. Matos and T. Tobias on plans for this meeting.

The Data Collection Work Group was tasked with designing and refining the implementation of a trip ticket program and the bulk of this work has been completed. Another task was to work with the ACCSP on discards and releases. Committee members agreed that since the ACCSP seems to be further along in this area, and the bycatch issues in the Atlantic are not the same as in the Gulf, it would be prudent for the work group to gather information and flesh out details before attending a joint meeting with the ACCSP. Therefore, a tentative date for a work group meeting is August 10, 1999 in Atlanta, Georgia.

The Data Collection Procedures Work Group has been charged with continued development of the ComFIN Procedures Document which explains data collection procedures. Donaldson suggested that a conference call and work assignments may be suitable at this time, with a meeting to be held later in the year.

Now that much of the planning for ComFIN has been completed and the program is beginning its operational mode, J. Poffenberger suggested that the Program Design Document be used by the various work groups as a guide to help identify priorities and direction.

### **Presentation of Louisiana Trip Ticket Program**

Jill Kelly of the Louisiana Department of Wildlife and Fisheries (LDWF) gave a presentation on the Louisiana Trip Ticket Program which began on January 1, 1999. Kelly reviewed the procedures manual which outlines the responsibilities of the dealers and fishermen. Training workshops were held throughout the state, as well as in LDWF offices in Baton Rouge and New Orleans. Training for dealers was available on a walk-in basis at these two offices. Dealers are required to use LDWF established trip ticket forms to document commercial landings transactions. Another form used is the monthly submission sheet which summarizes the trip tickets for the month.

Kelly also described the scanning process and noted that the anticipated number of tickets to be scanned will be approximately 500,000 per year, or 2,500 per day. Kelly described for Committee members the entire trip ticket process and fielded inquiries during the question and answer session. In summary Kelly noted problem areas and recommendations for start up of a trip ticket program, highly recommending that a pilot study be done before implementation. Kelly noted that J. Shepard is currently working on a report of the trip ticket program which will be available upon request.

### **Discussion of the Direction of ComFIN**

D. Donaldson noted that until recently the ComFIN program was in a planning mode and now is at a point where implementation is beginning to take place. M. Osborn noted that there are other facets to this transitional stage, namely from Southeast to Gulf and Caribbean planning. Osborn noted that the ACCSP developed a white paper outlining scope to include all living marine resources, endangered species, marine mammals, etc. With the FIN program there has been an emphasis on finfish, shellfish, and commercial and recreational landings, and Osborn questioned whether a re-examination of the scope of ComFIN is in order. Several suggestions were made by Committee members including use of the Program Design Document, the possibility of having another facilitated session, and more integration between the NMFS and the states. L. Kline noted that the ACCSP has been experiencing a similar situation with transition, and suggested that the FIN finalize the Program Design Document. Both state and federal partners of the ACCSP, have been asked to review the Program Design Document in relation to where their particular agency is in terms of the ACCSP program design. J. O'Hop noted the importance of having involvement and familiarity with the program at the state director and regional level.

After lengthy discussion, Committee members agreed that a FIN ad hoc work group be formed to examine the Program Design Document and develop an implementation strategy. Members of this work group will include a representative from NMFS Statistics, J. Poffenberger, T. Tobias, D. Matos, R. Lukens, and P. Campbell. This work group will meet prior to the fall FIN meeting. Staff will notify members of time and location of the meeting and will provide them with copies of the ACCSP Program Design Document.

### **Other Business**

D. Donaldson reported that one of the subjects addressed at the last ACCSP Operations Committee meeting, was the possible implementation an Interactive Voice Response (IVR) system in the Southeast. This system is currently being used in the northeast, and Bill Cole suggested including the Gulf states during the development of this system in the Southeast. J. Poffenberger noted, that from the federal perspective, including the Gulf states would not cause a significant increase in the cost of this project. Poffenberger also stated that federal regulations would have to be changed to accommodate an IVR system. The ACCSP will be funding a prototype which will be developed for use with about 30 king and Spanish mackerel dealers on the Atlantic coast. Poffenberger noted that the red snapper fishery and the net fisheries for Spanish and king mackerel would benefit from an IVR system in the Gulf. Committee discussion followed and it was agreed that an IVR system in the Gulf would be considered at a later time when more information becomes available. T. Tobias noted that although the U.S. Virgin Islands does not have quota monitoring at this time, they would like to be kept informed on the subject of IVR.

Donaldson reported that a scholarship fund has been set up in memory of Ron Schmied. Anyone wishing to make a contribution to this scholarship fund, may contact Donaldson for more information.

**There being no further business, the meeting was adjourned at 11:00 a.m.**

**APPROVED BY:**  
  
**COMMITTEE CHAIRMAN**

**STATE-FEDERAL FISHERIES MANAGEMENT COMMITTEE  
MINUTES**

**Wednesday, May 5, 1999**

**New Orleans, Louisiana**

Chairman Larry Simpson called the meeting to order at 1:00 p.m. The following members and others were present:

**Members**

Ed Conklin, FDEP, Tallahassee, FL  
Roger Zimmerman, NMFS, Galveston, TX  
Vernon Minton, ADCNR/MRD, Gulf Shores, AL  
Corky Perret, MDMR, Biloxi, MS  
Mike Ray, TPWD, Austin, TX  
John Roussel, LDWF, Baton Rouge, LA  
Larry Simpson, GSMFC, Ocean Springs, MS

**Staff**

Ron Lukens, Assistant Director, Ocean Springs, MS

**Others**

Mark Holliday, NMFS, Silver Spring, MD  
Joe O'Hop, FDEP, St. Petersburg, FL  
Joe Shepard, LDWF, Baton Rouge, LA

**Adoption of Agenda**

The agenda was amended to add items under "Other Business." L. Simpson suggested that those items under "Other Business" be taken up first, since J. Roussel would be arriving late. The Committee agreed, and unanimously adopted the agenda as amended.

L Simpson indicated that 4 of the 5 state directors were in attendance, along with a representative for Louisiana sitting in while J. Roussel was en route. The NMFS was represented by Roger Zimmerman (proxy for Brad Brown) and Mark Holliday from the Washington Office. L. Simpson was sitting as a non-voting member. Doug Frugé, another member of the committee for FWS had a conflict and was unable to attend.

GSMFC staff compiled a list of statements of work and budgets associated with each of the proposed items. Simpson pointed out that the first four months of the 1999 program was contract. Starting May 1 through the end of 1999, a cooperative agreement would be in place. The new work will be part of an amendment to the cooperative agreement. The current meeting is designed to identify funding items to amend the cooperative agreement, adding additional items that would begin July 1, 1999, and run through December 31, 1999. Then, the GSMFC would submit a full year funding

cooperative agreement beginning January 1, 2000. There are indications from NMFS that the amount of money available for 1999 is in question or is yet to be firmly identified.

Perret asked if the funding is in the NMFS appropriations. Simpson indicated that the funding has been appropriated, but the issue is authority to spend. Simpson then went through the funding from two line items and how the money breaks out. The Recreational Fish Harvest Monitoring line item is 3.9 million dollars. The language says that one third will go to the Gulf, one third will go to the Atlantic, and one third to the Pacific. A NOAA tax of 5 percent is taken off the top. In addition, a South Carolina red drum project, at \$500 thousand, and the economic add on at \$500 thousand, are also taken off the top. Lukens clarified that the economic add on is rotated around the coasts each year, so the \$500 thousand is an annual deduction.

The total is now \$2.7 million. Then divide that figure by 3, according to the language, which results in about \$900 thousand. Out of the \$900 thousand, the telephone survey for the Gulf is deducted at an estimated \$250 thousand. That leaves \$650 thousand that should be available to the FIN. Next is the GulfFIN line item, which is \$3.0 million. There is a NOAA tax on that line item for 1999 of \$150 thousand, which leaves \$2.85 million. The \$2.85 million is combined with the \$650 thousand, resulting in \$3.5 million dollars to do the work. Through the process of the contract and the cooperative agreement, \$2.222 million was identified to conduct the recreational survey through December 31, 1999. Subtract that amount from the total and there is a balance of \$1.279 million.

If the \$650 thousand is not available, then about \$600 thousand to \$700 thousand will be the total available.

Perret asked Simpson what he meant by "if the \$650 thousand is not available." Simpson explained that Holliday has briefed the new AA, Penny Dalton, on the details. He indicated that he had talked with her that morning and indicated what the GSMFC and states are planning. He asked her how much money is available to work with? She suggested to have the meeting and then talk afterward. Simpson agreed.

Lukens indicated that it is critical to get the cooperative agreement amendment submitted in time for a July 1 start. Lukens indicated that the Committee needed to read through and discuss each item contained in the briefing materials.

Perret asked if the items in the briefing materials are the priorities from the last Gulf States meeting? Lukens answered yes.

L. Simpson indicated that the menhaden sampling activity was already taken care of for all of 1999, so it is not on the list. In addition, it was noted that the headboat sampling activity was paid through the end of August 1999, so the funding consideration is for only the last three months of 1999.

Perret asked how much was available for the purpose of the discussion. Lukens indicated that it was

\$1,279,624.66. Lukens then suggested taking each task as described, evaluating both a twelve month and six month budget and determine whether or not to fund that activity using the funding balance.

Lukens pointed out that the information was in the meeting packet and in the minutes of the Puerto Rico FIN meeting.

Lukens stated that the first two sheets are Texas, one is 6 months and one is a 12 month activity and budget. The statement of work reflects the development of the charter boat sample frame, or the charter boat for hire universe for the State of Texas.

Lukens suggested to discuss the items as they come up, but wait until all have been completed before voting up or down. There was general agreement to proceed in that fashion.

Lukens noted that the charter boat frame was a high priority from the FIN meeting. He added that Florida went through the exercise 2 years ago in building the Gulf sample frame for Florida. In that period of time they have had samplers out in the field compiling data, so they have done a great deal of the east coast work at no cost. Now they are in a situation where they actually need some dollars to do mail-outs, phone calls back to captains, and other office work. There was general discussion about the Texas and Florida charter boat sampling frame development, with general agreement that they need to be completed.

The next item for consideration was installation of computer hardware and software. There was some discussion regarding the implications of the computer installation. Lukens indicated that the system represents the centralized data management system for the Gulf of Mexico. The states and NMFS samplers will collect data, which will be input into the system and made available back to the partners on a constant basis. Lukens also explained that the states and the NMFS have signed a MOU that facilitates the full exchange of confidential data under strict guidelines; consequently, there will be no roadblocks to the states having full access to the data management system.

M. Ray asked why the budget included 120 copies of the software licensing. Lukens explained the system will be designed to make data available to the public via the web. In order to do that with Oracle it is a requirement to purchase a specified number of licenses to account for multiple, unidentified users through Internet access. If there are 10 individual users, you would buy 10 licenses, but for Internet access for multiple concurrent users, the minimum purchase is 120 licenses. Lukens added that the cost is a one time cost. Annual renewals of the licenses is much less than the 2000 budgeted amount.

Perret expressed concern for "public access" to the data management system through the Internet. Lukens explained that the public will have access to standard queries. They will not have access to the raw data. Nobody but certified people, identified by the state agencies and the NMFS, will have access to the raw data.

Lukens explained that the FIN Committee had asked that their recommendations reflect that fact that there was not consensus on the issue of the data management system being housed at the GSMFC

office. There was a great deal of discussion regarding the issue, and the minutes of that meeting reflect that the NMFS believes that the data management system should be housed on the Center's machine. The states are on record by letter saying they do not want the Center to continue to provide data management for the system because of past bad experiences. The FIN Committee was concerned that the State-Federal Fisheries Management Committee understand that difference of opinion and factor it into their decisions.

R. Zimmerman expressed that he did not fully understand how the system will be implemented. He indicated that it needs to be addressed, and in a very deliberate manner. Lukens responded that the FIN committee, through an ad hoc work group, will be working over the next year and a half on the implementation strategies, which would answer Zimmerman's concerns. Lukens explained that none of the items will come to fruition for several years, during which the details of implementation will be fully debated and understood by all the partners. The decision to date has been a policy decision that the states want the responsibility for centralized data management to be handled by the GSMFC. Having made that decision, and clearly communicating it to all the partners, the next step is to use the funding available for capital expenditures that will form the backbone of the program.

M. Holliday raised his concern on behalf of the NMFS, indicating that he doesn't understand why the GSMFC is proposing to perform a function that is currently being performed by the Southeast Fisheries Science Center. Lukens responded, saying that it is not a new issue. It has been discussed a number of times, but it hasn't been resolved. The reason it hasn't been resolved is because the people that are on either side of the issue haven't changed their minds. He reminded the Committee that there are letters on record saying that the states support moving in this direction. There have been discussions with the Pacific States Marine Fisheries Commission regarding the administration of PacFIN and RecFIN. Their history and the experience led them to advise the Gulf States that the GSMFC should be handling the data management system. Louisiana has indicated that they believe that no single state should be responsible for managing the system either. The flexibility within an interstate commission makes it so much more powerful and useful. Lukens added that the Center is still going to be the NMFS data management center for the southeast region. He indicated that it will not detract from the current NMFS activities, and actually should make NMFS resources more readily available to NMFS needs, because they will not have to worry about coordinating and monitoring individual states on a continuing basis. The GSMFC will do that.

L. Simpson clarified that when the issue of control arose, it should be clear that it is not about controlling the database, but rather about having input into the program and having some semblance of confidence that you are going to be able to influence administrative and operational decisions.

The next item was the prototype data management system for Louisiana. Lukens explained that, while the item is for Louisiana's system, it is actually a contract item with an outside consultant to set up the transfer protocols between Louisiana's data management system and the central data management system. The GSMFC will manage the contract.

There was some discussion regarding how the project will be carried out. Lukens indicated that part of the budget item is for the contractor and part for the Louisiana Department of Wildlife and

Fisheries. Louisiana staff will have to meet and work with the contractor to construct the proper reconciliation processes to move Louisiana's data into the central system. The GSMFC will manage the contractor portion of the project, and Louisiana's portion will be transferred through their subcontract with the GSMFC.

The next item was development of trip ticket systems for Mississippi, Alabama, and Texas. The Committee discussed Mississippi first. Lukens explained that Mississippi provided two budgets, one using the scanner and one not using the scanner. Louisiana is now using the scanner to try and make the data entry part of it more efficient. A discussion regarding the proposal from Texas ensued. There was concern that their commercial data project did not reflect trip ticket system development. Lukens explained that they are proposing to work on issues that will lead to trip ticket system development, such as identifying sources of unreported landings, sales to restaurants, etc. In order to develop a trip ticket system, such issues need to be addressed.

The next item was headboat sampling. This item was proposed to run from October to December 31. Lukens explained that the funding is to replace money NMFS provides to the GSMFC to hire headboat samplers. The GSMFC has been operating under a purchase order with the NMFS to transfer the funds and hire the samplers, who are managed by a NMFS employee. He explained that, as a result of the last State-Federal Fisheries Management Committee meeting, it has been agreed that FIN funds would be used to continue head boat sampling, since funding from NMFS would be discontinued.

Lukens indicated that the traditional funding that NMFS has used from the Center to pay for headboat sampling has never been line itemed before. They were using holdover money and year end money. It was further explained that the FIN Committee has expressed that the headboat sector needs to be examined in light of the pilot charter boat survey. The FIN Committee has developed a work group to begin working on plans for evaluating alternate methodologies for sampling head boats. Some discussion ensued regarding the size of the head boat fishery and funding in subsequent years. Lukens explained that for the current project, only the boats currently listed in the Beaufort Head Boat Survey would be included. He further explained that beginning January 2000, the FIN would cover the entire costs of the samplers for head boats.

Lukens reminded the Committee that every item discussed to that point was listed as a high priority by the FIN Committee. The head boat sampling was not. The interpretation is that the rest of the items are important but would be funded only after funding the upper tier of projects.

The next item was funding for Florida to revamp their license data base to be compatible with Oracle. Lukens pointed out that the item was deferred from last year's transition projects until the current year, so it is not a new project.

The next item was support for enhanced biological sampling and commercial dockside interviews.

Lukens reminded the Committee that this item was one that was discussed and tentatively approved for funding at the previous State-Federal Fisheries Management Committee meeting. Lukens further



explained that the GSMFC would hire samplers as contract employees. The samplers are currently NMFS employees; however, the funding for them will not be available. The GSMFC will hire them, and they would continue the job that they have been doing.

The next item was reconciliation of Texas recreational and NMFS headboat data to Oracle format and the new data management system. Lukens pointed out that the item was a low priority from the FIN Committee. It was brought up at the last minute, with no expectation that it would be funded in the current cycle. It is a good project, but it is not something that needs to be done in a quick time frame.

The following is a list of the items and associated funding amounts:

Texas For-hire Sampling Frame	\$24,000
Florida East Coast For-hire Sampling Frame	\$4,000
GSMFC Data Management	\$276,000
Prototype Louisiana	\$209,000
Trip Ticket Mississippi	\$129,000
Trip Ticket Alabama	\$161,000
Trip Ticket Texas	\$47,000
Head Boat Samplers	\$30,000
Florida License Data Base Update	\$77,000
Biological Sampling	\$67,000
Texas and Headboat Conversion to Oracle	\$50,000 (approximate - no budget)
<b>TOTAL</b>	<b>\$1,074,000</b>

Some discussion ensued regarding the total amount of funding available to support the above items. Lukens reiterated an earlier discussion regarding the GSMFC interpretation of the available funding. According to the Congressional Appropriations committee language, the Gulf States should receive a one third share of the Recreational Fish Harvest Monitoring line item, after listed deductions, which is interpreted for 1999 to be about \$651,663.00. The question is whether or not NMFS will indeed make the funding available to the proposed projects. Lukens pointed out that to date, NMFS has not allowed the Gulf States to have those funds.

Simpson indicated that in pursuing his initial charge from the Commissioners to develop a data program, the funding amounts arrived at, \$3.0 million for recreational work and \$4.0 million for commercial work, were based on 100% funding from the FIN line item. That means that all five states' trip ticket programs would be supported at 100%. Recognizing that only a portion of the full \$7.0 million has been appropriated, the states may want to consider, in the future, providing partial state funding to support their trip ticket programs. In that way, the reduced appropriated amount will go farther to increase our data capabilities. Simpson further explained that if the states decide to make such a decision, it would mean providing partial FIN funding to Florida and Louisiana, who are currently paying for those programs with 100% state money. Roussel indicated that it was his desire to begin that discussion and see what comes from the next several years' appropriations.

Roussel pointed out that the total amount of \$1,074,000 leaves a balance of the funds thought to be available on the table. Simpson pointed out that Holliday indicated that all the funds identified by the GSMFC are not available. He asked the group if they want to push for the additional funding anyway. Roussel suggested to take the remainder and give half to Louisiana and half to Florida to help offset trip ticket program costs.

Following additional discussion, a **motion** was put on the table by Perret to submit the cooperative agreement for the amount of \$1,074,000.00. The **motion** was seconded and passed **unanimously**.

There ensued discussions regarding the current status of the fishery management plan for blue crab, menhaden, legislative and executive office resolutions for the 50<sup>th</sup> Anniversary meeting, red tide and Bonne Carre money, and OCS revenue proposals.

**There being no further discussions, the meeting adjourned at 5:00 p.m.**

**FIN/ACCSP COMPATIBILITY WORK  
GROUP REPORT**

FIN/ACCSP Compatibility Work Group  
Meeting Summary  
May 11, 1999  
Washington, DC

The meeting was called to order at 8:35 a.m and the following people were present:

Lisa Kline, ASMFC, Washington, DC  
Ron Lukens, GSMFC, Ocean Springs, MS  
Joe O'Hop, FMRI, St. Pete, FL  
John Hoey, NMFS, Silver Spring, MD  
Page Campbell, TPWD, Rockport, TX  
Dee Lupton, NCDMR, Morehead City, NC  
Bruce Joule, MDMR, West Boothbay Harbor, ME  
Mark Alexander, CDEP, Old Lyme, CT  
Joe Moran, ASMFC, Washington, DC  
Mike Cahall, ASMFC, Washington DC  
Dave Donaldson, GSMFC, Ocean Springs, MS

Purpose of Meeting

D. Donaldson stated that the purpose of the meeting was to discuss and develop the mission of the work group. The group needs to determine the direction of the work group and develop a plan for addressing the issues related to both Fisheries Information Network (FIN) and Atlantic Coastal Cooperative Statistics Program (ACCSP). D. Donaldson pointed out that the initial task of the group was to compare the program design documents for the FIN and ACCSP. It was noted that at the last meeting, the group reviewed the two documents and although that was a successful activity, the work group cannot do that at every meeting. Therefore, the group needs to determine what the mission of the group will be. It was pointed out that there needs to be periodic review of the documents however not at every meeting. It was suggested that for each meeting, the group identify areas the both programs are working on and discuss how the two programs can coordinate the activities to ensure comparability and compatibility among the programs. The group believed that this was a good approach and decided that this should be how the group operates for future meetings. The group began discussing regional differences in terms of data elements. It was noted that in the ACCSP, it will be necessary to add some additional data elements due to regional differences. These elements will be collected as well as the minimum set of data agreed upon by the ACCSP. This issue will be discussed during the implementation meetings being conducted on the Atlantic coast. It was noted that the regional topic is not an issue in the Gulf of Mexico since the geographic area is much smaller and there are no real regional difference, in terms of collection of data, in the Gulf of Mexico.

The group also discussed getting the regional fishery management councils more involved in the FIN and ACCSP. It was pointed out that one of the goals of both FIN and ACCSP is for the councils to utilize these regional programs for their data needs and requests. It is imperative that the regional councils become more integrally involved in these program and the group discussed ways for integrating the regional councils into FIN and ACCSP. L. Kline stated that there are people involved in the ACCSP that give updates to the South Atlantic, Mid-Atlantic, and New England

Councils on a periodic basis. R. Lukens noted that FIN staff has discussed providing more routine updates to the Gulf of Mexico Council as well. After some discussion, the group decided that the FIN and ACCSP staffs should meet with the Council staffs to discuss this issue. It was decided that the FIN and ACCSP staffs should provide an overview of the respective program. During these presentations, it will be important to point out the areas where the Councils will be affected and how they can provide input into these systems.

#### Review of the Program Design Document

J. O'Hop stated that there were several areas in the FIN Program Design Document that needed to be discussed by the group. The group began reviewing and comparing the FIN and ACCSP documents. The first section addressed was the *Policies and Goals* section of the FIN document. It was noted that the ACCSP has some additional policies that are not included in the FIN plan and R. Lukens wondered if the FIN should address these issues and develop the appropriate policy statements. The group discussed this topic and it was noted that the two policy statements developed by ACCSP and not FIN are in areas the FIN is just beginning to address (outreach and social and economic data). D. Donaldson stated that when those groups meet, one of the tasks can be the development of a policy statement regarding the appropriate issues. The group also discussed the need for a *Goals* heading in the FIN plan. L. Kline stated that the goals in the ACCSP plan are items that are long-term goals and something the program is striving to achieve and the group should attempt to identify similar goals for FIN. After some discussion, the group believes a goal regarding the requirement of a unique identifier for all commercial, recreational, and for-hire fishermen should be developed for the FIN. The next section discussed by the group was the *Standard Definitions* section. It was noted that the ACCSP has a much more comprehensive list of definitions than the FIN. After some discussion, the group recommended that the FIN examine the ACCSP definitions and determine if they meet the needs of the FIN. This issue will be addressed at the next FIN meeting and will probably be addressed by an ad hoc work group. The next section addressed was the actual data collection modules. As the group began to review the various tables for the commercial and recreational components of the FIN, it was suggested that it really was not in the purview of this group to compare and contrast these components. This task would be better addressed by the various FIN work groups and it was agreed to charge the appropriate work groups to undertake this task at their upcoming meetings.

#### Coordination of Activities between FIN and ACCSP

The group identified several areas where both the FIN and ACCSP are currently in a developmental stage and believed there would be some benefit in coordinating the efforts among the two programs. The areas that were identified included data management, implementation strategies, permitting/quota monitoring, and standard codes.

M. Cahall provided an overview of the current ACCSP Data Management System. The prototype is currently up and running. There are official data for the NMFS-NE logbook program and the Florida trip ticket data will be loaded into the system in the near future. To date, the feedback received from the various users has been positive. D. Donaldson stated that with funds from the GulfFIN line item, FIN will begin development of FIN data management prototype using the Louisiana trip ticket program. This task will utilize much of the hard work and effort put forth by the ACCSP. The GSMFC, Louisiana and the contractor (ICF Kaiser) will begin addressing this issue later this year. It was noted that in the spirit of cooperation, the FIN and ACCSP should work

on jointly developing the additional modules for the data management. M. Cahall noted that if there are significant differences between the FIN and ACCSP data elements, there will need to be extensive modifications needed to make the two systems compatible. L. Kline stated that if there are differences, the group need to determine if there is a logical reason for the differences. The group discussed the number of people necessary to finish the development and maintain the system and determined that it would take about 4 or 5 people (both FIN and ACCSP personnel) to complete the development of the system and about 3 or 4 people for ongoing maintenance. This would be accomplished with FIN and ACCSP personnel only. It would not include utilizing a contractor. The other option would be to continue development of the system using a contractor. The group discussed the issue of utilizing FIN and ACCSP staff vs. a contractor to complete the system but no consensus was achieved. D. Donaldson pointed out that although the ACCSP currently has personnel to address this issue, the FIN has yet to hire a person. However, he stated that the GSMFC will probably be hiring a person within a short period of time.

J. Moran stated that the ACCSP is currently conducting implementation meetings with all the states on the Atlantic coast. The purpose of these meetings are for all the players within a jurisdiction to sit down and work out the details of how to actually implement the ACCSP within that jurisdiction. He and M. Cahall have already attended one of these meetings and another is scheduled for later this week. It was pointed out the NMFS-Southeast Region will be participating in the meetings involving the South Atlantic states. Since the NMFS-Southeast Region encompasses both the South Atlantic and Gulf states, it would be useful for NMFS to have an idea of the activities they will be involved in related to data collection and management for the Gulf of Mexico as well as the South Atlantic. R. Lukens stated that during the discussions regarding identification and selection of activities for funding in 1999 in the Gulf of Mexico, partners discussed issues concerning the division of labor among the partners. It appears that these types of issues are similar to the ones that will be discussed at the ACCSP meetings and there seems to be a need for these meetings in the Gulf of Mexico as well. To help ensure that NMFS has a clear picture of its tasks, it was suggested that the FIN set up similar meetings in the Gulf of Mexico. D. Donaldson will attend one of the ACCSP meetings (probably in the South Atlantic region) to get a feel for the dynamics of the meeting. Also, both the FIN and ACCSP issues will be discussed at the Florida meeting to alleviate the need for two separate meeting in Florida. D. Donaldson stated that he will attempt to schedule the meetings during the summer of this year to coincide with the ACCSP meeting.

D. Donaldson stated that at the last meeting, the FIN discussed the development of a Permitting Work Group to begin addressing the issue of licenses and permits and developing a process for integrating the permitting and licenses systems with the catch data. J. Moran stated that the ACCSP is also looking at this issue and this provides a perfect avenue to jointly addressing the issue to ensure compatibility between the programs. Once the respective groups have been established, D. Donaldson and J. Moran will work together to set up a meeting to discuss the necessary issues. The group also examined working together on the recreational quota monitoring issues. The ACCSP has a group that will be addressing this issue later this year. At the last RecFIN(SE) meeting, the RecFIN(SE) Committee tasked the RecFIN(SE) Biological/Environmental Work Group to begun examining this issue. It was suggested that a subset of the RecFIN(SE) Biological/Environmental Work Group be selected to participate in the upcoming ACCSP meeting. D. Donaldson stated that he would contact the membership and let J. Moran know who to include from the FIN.

The last two issues discussed by the group related to standard codes. The first related to the extensive list of standard codes for a variety of different items (species, gears, etc.) already developed by the ACCSP. It was suggested that the ComFIN Data Collection Work Group examine the existing list of codes and ensure that they cover all possible situations in the Gulf of Mexico. The other issues related to water body codes which is still not resolved within the ACCSP. The ACCSP has a Standard Codes Committee that will be addressing this issue in the near future and it was suggested that it would be beneficial to have Gulf of Mexico representation at this meeting so an agreed upon method can be developed for creating water body codes. D. Donaldson suggested that Joey Shepard (Louisiana Department of Wildlife and Fisheries) be asked to participate in this meeting. In the event that he could not attend, P. Campbell would be willing to attend the meeting. D. Donaldson stated that he would contact J. Shepard and check to see if he would be available to attend the meeting and let J. Moran know. It was also suggested that D. Donaldson contact each state and ask them to compile a list of inshore water body codes that are used in their state. This information will be provided to J. Moran for the meeting.

**There being no further business, the meeting was adjourned at 2:30 p.m.**

## **Summer State Directors Meeting**

Holiday Inn Fort Brown, Brownsville, TX

El Paraiso Resort, Tampico, Mexico

May 22-25, 1999

### **Participants:**

Ed Conklin, FDEP  
Vernon Minton, ADCNR  
Pat Burchfield, Gladys Porter Zoo  
Les Hodgson, Texas Shrimp Association  
Mike Ray, TPWD  
Larry McEachron, TPWD  
John Roussel, LDWF  
Corky Perret, MDMR  
Larry Simpson, GSMFC  
Ron Lukens, GSMFC  
Steve VanderKooy, GSMFC

### **Agenda**

1. General Work Session
  - a. Data Program
    - Final Cooperative Agreement
    - Where are we going long-term
  - b. ANS Task Force / Non-indigenous Species
  - c. ASMFC and GSMFC Interjurisdictional Sharks
  - d. FMP development process
  - e. Next Meeting
2. Tour Tamaulipas Turtle Camp
3. Tour Rancho Nuevo Turtle Camp
4. Tour Lake Guerro



*Jan Culbertson*

**TCC ARTIFICIAL REEF SUBCOMMITTEE**  
**Thursday, June 10, 1999**  
**Kemah, Texas**

Chairman Mike Buchanan called the meeting to order at 8:40 am. The following members and others were present:

**Members**

Mel Bell, SCDNR, Charleston, SC  
Mike Buchanan, MDMR, Biloxi, MS  
Jan Culbertson, TPWD, Houston, TX  
Les Dauterive, MMS, New Orleans, LA  
Carlos A. Diaz, FWS, Atlanta, GA  
Jon Dodrill, FDEP, Tallahassee, FL  
Steve Heath, ADCNR, Dauphin Island, AL  
Rick Kasprzak, LDWF, Baton Rouge, LA

**Staff**

Ronald R. Lukens, Assistant Director, Ocean Springs, MS  
Nancy K. Marcellus, Administrative Assistant, Ocean Springs, MS

**Others**

Suzanne Contreras, TX General Land Office, Austin, TX  
John Embesi, TPWD, Houston, TX  
Paul Hammerschmidt, TPWD, Austin, TX  
Kirsten Larsen, GCRL, Ocean Springs, MS  
Doug Peter, TPWD, Houston, TX  
Richard F. Silloway, SNAME, Humble, TX  
Win Thornton, WINMAR Consulting Services, Houston, TX

**Adoption of Agenda**

R. Lukens asked that item "11. c. COE Policy on Artificial Reefs" be added to the agenda. Without objection, the agenda was adopted.

**Approval of Minutes**

J. Culbertson asked for a few modifications to the minutes under the database discussion to further clarify her statements. The following modifications were suggested:

**Page 4:**

Culbertson - It is rare that we have a different permit number. The only thing that is happening in our GP is that they give it an extra slash. The original number stays the same. Could we enter fields

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for new permit numbers? In other words have the most current permit number and then columns for expired permit numbers.

Maheer - That is not a bad idea, Jan. Have your sites ever changed names?

Culbertson - No.

Change to:

Culbertson - It is rare that we have a different permit number for a reef site. The only thing that changes is the extension number behind the permit number for individual permits. However, our General Permits all have the same numbers but have a back slash with a new number to follow the GP number. The original number stays the same. Could we enter fields for new permit numbers? In other words have the most current permit number and then columns for expired permit numbers.

Maheer - That is not a bad idea, Jan. Have your sites ever changed names?

Culbertson - Only internal reefs within a permitted area.

Page 5:

Culbertson - We have permits that we have shrunk the lease site, but as long as we had no material outside the boundaries, it did not matter.

Change to:

Culbertson - We have permits that we have decreased the permitted area size, but as long as we had no material outside the boundaries, it did not matter.

Page 5:

Culbertson - For tracking.

Change to:

Culbertson - For tracking purposes.

L. Dauterive moved to approve the minutes as amended. The motion was seconded by S. Heath and unanimously approved.

### State-Federal Reports

**Alabama** - S. Heath reported that Alabama has a new program that is very interesting and looks like it will be a tremendous success. They started doing inshore, low profile artificial reefs in the bays, with the first ones inside derelict wharfs that had lots of old pilings. Broken concrete rubble and concrete block was placed in there, proving to be very effective. They decided that they would like to take some of the larger pieces of the coastal river bridges, designated to be used for artificial reefs when they were replaced, and have them broken up in such a way that they would have a low enough profile that they could be placed in the bay to form rings of concrete around a couple of the historical oyster reefs that had very low production over the last several years. One of the problems for the low production was because shrimp trawls were being towed across the reefs. They were not marked, and they were low enough profile that shrimp nets could drag across them without hanging. Alabama set up rings of concrete and marked them with pilings and signs. Ultimately, the centers of these rings will be filled with additional oyster cultch material. This has been done on one reef on the west side of Mobile Bay. There is also cooperative project with Auburn University to monitor the development of the reefs and the production of oysters on the oyster cultch in the center. The signs and the concrete rubble have effectively stopped shrimp trawls from dragging across the reefs. The program now has the opportunity to use old concrete storm drainage pipes that will be pulled in Mobile as they expand and widen various roads. They are working on a cooperative project with the Mobile Wildlife Conservation Association and the Coastal Conservation Association to get labor and equipment donated to take this pipe of various sizes and create ten more inshore reef areas. It has developed into a tremendously cooperative effort, including consultation with shrimp fishermen about various sites that would not conflict with shrimping activities. Most of the sites are over historical oyster reefs. There will again be plans ring those sites with concrete rubble and put cultch in the center and inside derelict wharfs. In the process, the shrimp fishermen not only did not object to the sites chosen, but pointed out other "hang" areas which could be designated. They were happy to incorporate a couple of those sites into the plan. The program has been dubbed "Roads to Reefs" and is proceeding positively.

**Louisiana** - R. Kasprzak reported that Louisiana has 17 permitted applications for artificial reefs using obsolete oil and gas platforms. These range in size from 90 feet of water to about 300 feet of water. That brings the total of their program right now to 77 reefs constructed of artificial reef material, with about \$12 million in the trust fund. They also developed a web site, *wlf.la.us*, that highlights the program.

**Texas** - J. Culbertson reported that the Texas Department of Transportation had approached them about a swing bridge and the Galveston causeway. If accepted, it would a 5 year project, which is now in the planning stages. They just completed a reef offshore, the Mitchell Reef, that is within the Galveston 189 permitted reef. A partial removal, it is in 60 feet of water. Texas has seven partial removal sites to date. For 1999, they have four potential partial removals. The Mitchell Reef was just finished, with three structures in it for a total of seven structures during 1999. Texas has nearly \$5 million in their trust fund, including the Mitchell donation of \$300,000. That donation amount from the fact that, even though it is close to shore, the lighting requirement was going to be very

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expensive, because it is near an anchorage. This situation resulted in the buoy fee being increased. That option is available to the program through their legislation. Usually a donation is set at 50% of the realized savings by not hauling to shore for scrapping, but on two instances they have had to change/increase the buoy fee. At this time they have 8 permitted reefs that have buoys, which represents a lot of maintenance, costing approximately \$100,000 per year for buoy maintenance.

Culbertson reported that their general permit was to expire December 1999, and they decided to change the boundaries and some of the special conditions. Even though it advertised in a public notice, the Corps of Engineers indicates that nobody has objected. Discussions with their Advisory Committee has resulted in no comments or objections from shrimpers. The distance between permitted reef sites has been decreased to 3 miles, to coincide with the MMS OCS blocks. This will make the sites easier to track. Additionally, the distance requirement for pipelines has been decreased to 1,000 feet. This makes the Texas and Louisiana programs consistent.

They are in the process of setting up grant requests to obtain the *Clipper* and clean it to environmental specifications. They will be observing the process of cleaning the *Spiegel Grove*, which will be transported to Brownsville soon. That operation should help the program to be prepared for environmental cleaning if the *Clipper* is obtained. Culbertson provided the Subcommittee with the recently published historical document, "*Texas' Liberty Ships: From World War II Working-class Heroes to Artificial Reefs.*"

Culbertson reported on some difficulties they had this year with a small oil company. Texas was under the impression that the company who approached them with the reef donation was the owner of the structure. They had to prove this and sent papers of ownership. Texas Department lawyers did not see anything wrong with the documentation, and a deed of donation was signed. They checked with the Minerals Management Service (MMS), who indicated that the lease was owned by Union Pacific Resources, and they were the responsible party. When they talked with Union Pacific Resources, who was helping facilitate the donation, it was revealed that they owned the lease but did not own the structure. Neither MMS nor the State of Texas realized that fact. The problem is that the presumed owner had posted no bond with MMS. The repercussions of that were not realized until the owner faulted. They negotiated for a partial removal with the owner and signed a deed of donation. Costs significantly exceeded the small amount bonded by the removal contractor. Due to a number of complicating factors, MMS was forced to put a lien on Union Pacific Resources to will pay for removal and placement. This issue has sparked some discussion internally whether Texas should require a bond. Also in the future Texas will determine that MMS has a legal bond from the donating company to avoid such situations in the future.

**Florida** - J. Dodrill gave a report on Florida Artificial Reef Activities from January - June 1999. As a result of a constitutional amendment approved by the voters in November 1998 and through enacting legislation passed in April 1999 by the Florida Legislature, the Florida Game and Freshwater Fish Commission was merged with the Florida Marine Fisheries Commission (MFC) effective July 1, 1999. The legislation dismantled the Division of Marine Resources within the Department of Environmental Protection. The marine patrol, the research arm of the Division

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(Florida Marine Research Institute), saltwater licensing, protected species, and the Office of Fisheries Management and Assistance Services (Dodrill's Department) will be in a new Division of Marine Fisheries within the new Commission. There are indications that Russell Nelson, current Executive Director of the MFC, will head up this division. Dodrill has heard that Dr. Nelson is interested in the alternative uses of artificial reefs as fishery management tools (in other capacities besides recreational fishing locations).

Dodrill reported on the status of current Florida Gulf Coast artificial reef projects under USFWS federal grants. Three projects in the Florida Panhandle using a hollow concrete three sided module, with the trademark name "Fish Haven" (Artificial Reefs Inc. out of Gulf Breeze, FL), have recently been completed, including Okaloosa County for \$25,000 and Bay County with two projects for \$50,000. Deployments were at three depths: 25 feet, 60 feet, and 120 feet. A mix of the largest structures (Towers) occurred in conjunction with mid-size models (Fish Havens) and a small module (Fish Haven Junior) which was placed inside some of the towers to increase habitat complexity. Units were deployed as patch reefs, with six to seven patch reefs per project. Each patch reef is 50 yards or more away from the next nearest site. There are typically five to eight units per cluster. All units were deployed by crane and individually placed on the bottom. Also for Okaloosa County, two tugboats are being cleaned for deployment. Stability analyses were required for those vessels to ensure no movement in a 20 year return interval storm event at the depth placed (210 feet). The cost for each analysis was \$1,200. Both vessels passed the analysis. However, a barge proposed for use in Walton County in 60 feet of water did not pass the stability analysis, and they must now secure alternative concrete materials. Escambia County, proposing to use bridge rubble, is behind schedule due to delays in dismantling Bayou Chico Bridge. They may have to substitute concrete designed modules for the bridge rubble. Hillsborough County is building a new reef at an undeveloped permitted site near Egmont Key near the mouth of Hillsborough Bay. The reef is a combination of scrap concrete, laid out to simulate a spur and groove coral formation, and large pyramid shaped modules, used to serve as both fish habitat and a snorkeling/diving reef (20 feet of water). Lee County is scheduled to deploy two "Lincoln Log" modules-structures about 15 feet high and 40 feet on a side, composed of large concrete pilings stacked and pinned together to form a box with spaces of 18-24" between pilings. Manatee County is currently deploying scrap concrete of various shapes to several sites. Collier County has a similar project at a site five miles offshore in 30 feet of water.

New projects proposed under Federal Aid in Sport Fish Restoration Program and saltwater fishing license funds (\$300,000 from each source) include a four county joint project off southeast Florida (Broward, Palm Beach, Dade, Monroe Counties) designed to evaluate the socio-economic benefits of artificial reefs, use patterns, and user values comparing artificial reefs with natural reef systems. The counties and the National Marine Fisheries Service (NMFS) will provide some matching funds and in-kind services. Seventeen reef construction projects are underway in the Gulf (one tug boat and the rest scrap concrete or modules). Two concrete projects are underway on the east coast. All projects were based on competitive ranking from submitted applications. Two small side-scan sonar studies are planned. One is off Apalachee Bay in eastern Panhandle, while the other is targeting artificial reefs off two central East Coast counties. Indian River County is hoping to deploy four reefs, two fished and two unfished, for two years and possibly evaluating them through the Florida

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Institute of Technology. The following monitoring projects are conceptually approved: 1) quarterly monitoring of five to six ships off Broward County using Bohnsak-Bannerot technique at three points along hull with possible comparison with natural reefs in area where similar type of fish counting work has occurred; 2) comparison of standing stock recreational fishery resources on Lincoln Log modules versus culvert projects in Lee County; 3) training of four volunteer dive monitoring teams by Reef Environmental Education Foundation (REEF) in fish identification and use of their data base system in reporting species and relative abundance through roving diver technique; and 4) stability analysis software program development.

At this time it is unknown what the new Commission's priorities are regarding reef legislative concepts. Draft legislative changes to the artificial reef statute have been submitted which would: increase first time penalties for illegal reef deployments from misdemeanor to third degree felony; require anyone storing artificial reef materials on board a vessel or transporting materials on a vessel across state waters to have a cargo manifest approved by local government or Commission representative and proof of access to a valid permitted reef site; mandate that all local governments deploying reefs independent of state involvement submit reports to the Commission office for data base tracking within 30 days of deployment (currently it is voluntary); increase stability requirements in state waters to require no movement nor substantial material failure during 50 year return interval storm event; limit materials in state waters to concrete, natural rock, modules composed primarily of these materials, or properly prepared steel hulled vessels (note however that 70% of all reef construction is in federal waters off Florida).

Regarding the *U.S.S. Spiegel Grove*, Monroe County (Keys) has received from the FDEP office a six page revised Memorandum of Agreement outlining MARAD, EPA, and state requirements for the transfer of this vessel. Monroe County has not yet returned a signed document. As of last week, EPA had not yet received a hazardous waste removal work plan draft from Brownsville Contractor, International Ship Breaking, nor a hazardous waste sampling protocol. Prior to being moved from Brownsville, the county must show proof that MARAD and the state will be covered through insurance carried by the towing company. A towing plan must also submitted to the 5<sup>th</sup> District Coast Guard in Hampton Roads. The state will not sign the Certificate of Transfer from MARAD until the county signs its MOA. Six sediment samples have been collected at the sinking site and will be tested for background levels of heavy metals and PCBs prior to the sinking vessel. Key West dive operators are moving ahead with a permit application for a ship site off Key West and want the state to apply to secure a MARAD vessel, the *General Hoyt Vandenburg*. The Florida Keys National Marine Sanctuary may put a moratorium on future ships in the Keys after the *Vandenburg* until they can get assess whether or not these sites are reducing adverse impacts to natural reefs from divers or providing net positive environmental benefits as far as redistribution of use away from natural reefs.

In April 1999, a permit request by Coastal Reef Builders was formally denied by a letter from the U.S. Army Corps Jacksonville District. The permit requested two private large areas in state and federal waters in the western panhandle totaling in excess of 116 square nautical miles. It does not appear, after 18 months of dealing with this, that the applicant will appeal.

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The Coast Guard Tampa and Miami Marine Safety Offices (MSO) have been working on a policy for vessel inspections due to being given very short notice for inspecting vessels or not even being informed at all by local governments prior to reef deployments. Tampa USCG MSO is scheduled to meet with southwest region reef coordinators at a semi annual meeting in Fort Myers to discuss this issue. Also to be discussed will be Collier County's approval for charter captains to use 5-10 gallon plastic landscape buckets, partially filled with concrete, with lengths of one to two inch PVC pipe protruding. Scores of these have apparently gone offshore in water shallower than 45 feet off Collier County without state knowledge and in violation of the general permit. They weigh about 100 pounds each.

There has been recent interest on the part of two different entities in incorporating cremated human remains in artificial reef modules, applying a bronze plaque on the modules, and deploying them commercially in permitted artificial reef sites. A variation on the theme was developing an underwater memorial garden on an existing permitted artificial reef site complete with statuary and bronze urns containing cremains secured in a wall or some other structure next to an artificial gazebo. The feeling of the Corps was that this was not an activity which would fall under a general artificial reef permit and would have to be evaluated on some other basis.

The U.S. Army Corps of Engineers has agreed not to issue any new five year general artificial reef permits allowing them to sunset January 2000. All new permits will be individual permits going out for public review and will require the applicant to answer a series of questions related to the Corps mandate to follow the National Fishing Enhancement Act and the National Artificial Reef Plan. Existing SAJ-50 (general) permits may be allowed to renourish sites for an unspecified period (up to five years).

**Minerals Management Service** - L. Dauterive reported that from an MMS perspective the oil and gas industry is thriving in the Gulf of Mexico. In addition to producing 100% of the gas and 97% of the oil on our Nation's Federal Outer Continental Shelf (OCS), Gulf of Mexico OCS platforms provide the largest artificial reef complex in the world. In support of the National Artificial Reef Plan, and in response to affected stakeholders, the MMS adopted a national Rigs-to-Reefs policy that supports and encourages the reuse of oil and gas structures for offshore artificial reef development. MMS finds itself recently in the business of being owners and donors of these structures. They anticipate they will continue in that role as a result of independent operators and entrepreneurs who do not have the capital to decommission the structures. In recent years, several of these companies have gone bankrupt and left the state, leaving MMS to inherit their property.

Dauterive provided copies of web page information on MMS's rigs-to-reefs. The web site address is [www.gomr.mms.gov/homepg/regulate/environ/rigs-to-reefs](http://www.gomr.mms.gov/homepg/regulate/environ/rigs-to-reefs).

Dauterive also reported that he wrote a paper entitled "*Rigs-to-Reefs Policy, Progress, and Perspective*" and presented it at a meeting of the Society of Petroleum Engineers in Austin early this year. The paper outlines the policy, and progress from an MMS perspective, in terms of rigs-to-reefs. It contains MMS policy and states that they encourage and support the conversion of

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platforms for reefs. It is also their policy to allow the operator to leave the well conductors in place, per MMS regulations of 15 feet below the mud line and to remove the well conductor to the same depth to encourage partial removals.

MMS is sponsoring a 30 minute local Florida television show which will air on Sunday at 6 pm. It is an educational outreach program on rigs-to-reefs and will be airing live. It consists of panel members including Dauterive; the chief from the MMS regional information office in Pensacola, because of potential development offshore Pensacola; and two local highly recognizable people in the Florida Panhandle area. The purpose is to educate people about the success of rigs-to-reefs in other parts of the Gulf of Mexico, both the economic benefits and the fisheries aspects. They will produce a video from this program, and Dauterive will send a copy to Lukens to make copies for the Subcommittee.

**Mississippi** - M. Buchanan reported that the Mississippi legislature passed (effective July 1) the ability to take private and public donations and set aside an artificial reef trust fund. They are currently working on trying to find possible siting areas. The artificial reef plan for the State of Mississippi is going before the Mississippi Commission for their consideration. They are continuing to work with Mississippi Gulf Fishing Banks, and they are disposing of concrete rubble on several of the sites, mostly in the eastern part of FH-13.

**East Coast** - M. Bell gave an east coast synopsis on artificial reef activities. Rhode Island is still working with lobster using mitigation funding. They still do not have a formal reef program. Massachusetts artificial reef coordinator Karen Rypka is on extended leave, and someone is filling in for her and working on a reef plan. In New York not much going on, although, Steve Heins is now chairman of ASMFC Artificial Reef Advisory Committee. Bill Figley, New Jersey, has one of the most active programs in terms of funding and private support. They are still participating in REEF-EX through the National Guard at Fort Dix. He has also sunk a number of Navy utility craft. He has published a couple reports lately, and he and Frank Stiemle have done some projects assessing the feeding mechanisms of organisms that grow on and around reefs. Delaware is doing some work inshore. There is currently no state program in Maryland. Most of Maryland's artificial reef work basically consists of Dewitt Myatt's program in Ocean City. North Carolina's Steve Murphey has left the program to work with their shellfish sanitation program. They were having an ongoing problem with tires washing ashore from the reefs built in the 60s and 70s and were using their reef program to clean the beaches. Murphey has not yet been replaced. In Georgia, Henry Ansley is working with Reef Balls, Inc., with a recent contract for 1200 reef balls. He is paying \$113 per unit on the bottom. Bell mentioned that they just did a similar reef ball contract with a price \$120 each. South Carolina is conducting research. They have a project off Georgia, funded primarily by the Office of Naval Research, and have placed 13 Artificial Reef Inc. units. They have 13 of the 8 foot base, 6 ½ foot tall units with some smaller units combined. The site is located adjacent to a Navy tower off Georgia. The units are in place, and they plan, by the end of the summer, to have a camera or series of cameras mounted on one of the units in the center to provide live video at the tower up to satellite link to the lab, so they will be able to monitor the reef off Georgia while sitting in the lab. They may be able to provide the live feed to educational television and/or a live web site.



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The ASMFC does not currently have the funding to sponsor meetings. The South Atlantic states were included in the essential fish habitat management plans so artificial reefs are considered part of the essential fish habitat in the South Atlantic Council's fishery management plans. Dealing with SMZ issues off the South Carolina, they are participating in a federally funded program where their state law enforcement officers have a grant from NMFS to purchase two vessels and retrofit another one to do offshore patrols. The South Carolina DNR officers are patrolling in federal waters, enforcing federal regulations on the SMZ. Enforcement is obviously a key issue regarding SMZs. In July 1999, a meeting will be held in Charleston with representatives from the Navy, Maritime Administration, and EPA to discuss possible research involving ships. The Navy is interested in collecting more data. The outcome will likely dictate the future of the Maritime Administration and Navy's ability to transfer ships for reef projects. There is a project on the West coast, in which San Diego is planning to sink a Canadian frigate, the *Yukon*, in November.

### **Society of Naval Architects and Marine Engineers**

Richard F. Silloway, Engineering Partners International, Inc., of Houston, Texas, spoke to the Subcommittee regarding the Marine Forensics Panel of the Society of Naval Architects. As a marine engineer he has been involved with troubleshooting regarding ship collisions and wrecks. One of the main objectives of the Panel is to understand how a ship actually sinks. In December 1998, marked the first time anybody has ever experimented with how a commercial ship actually sinks and what kind of path it follows while sinking. The Panel's interest is to be able to analyze the wreck on the bottom and determine what happened on surface to cause the sinking, what damage occurs on the way down, what damage was caused by collision with the bottom. To get to that point, they have to understand how a ship sinks. Silloway indicated that there is a mutual interest where ships are used for artificial reef programs. The artificial reef coordinator is interested in how the ship is going to end up on the bottom, while the Panel is interested in how it gets there. Within the Society of Naval Architects there are resources to analyze a vessel for stability through the entire sinking process. He suggested working with the committees to be involved ahead of a sinking to prepare the vessel for analysis during sinking. Silloway indicated that he would be the initial point of contact. His email address is: *EPISilloway@msn.com*.

### **Gulf Presentation at San Remo**

J. Dodrill distributed a copy of the abstract submitted on behalf of the Gulf States for the International Conference on Artificial Habitats for Fisheries to be held in San Remo, Italy in October 1999. The title of the paper is "A Comparison of Regulatory Processes and Issues Among Five Gulf of Mexico State Artificial Reef Programs: Smooth Spots and Rough Spots." The purposes of the paper include 1) to briefly describe the processes and responsibilities of the regulatory agencies most heavily influencing artificial reef development in the Gulf of Mexico; 2) to compare and contrast the strengths and weaknesses of these artificial reef regulatory processes, as they have been tailored to interface with the artificial reef planning and development programs unique to each Gulf coastal state; 3) to discuss efforts made to improve the permitting/regulatory process in recent years; and 4) identify permitting/regulatory issues warranting further evaluation. The abstract has been accepted and

Dodrill is interested in ensuring that the paper that comes out in the proceedings is a group effort and accurately portrays what is going on in the Gulf.

### **Status of GSMFC Sport Fish Restoration Administrative Program**

Lukens welcomed Carlos Diaz from the FWS Atlanta office who replaced Wally Walhquist as an official member of the Subcommittee. Lukens reported that the Commission has worked for many years with the FWS Federal Aid in Sport Fish Restoration Program using administrative funds to support the work of the subcommittee. Richard Christian has been receiving the same amount of money from the same source to support the Atlantic activities; however, the Atlantic Commission uses some of the funds for other projects. The law states that the FWS can take up to 6% of all of the tax revenues collected under the auspices of the Sport Fish Restoration program to administer the program. The language says that the Service can provide funding and support to states who want to compact themselves to do work. The commissions provide structured work plans, and the FWS has been supportive over the past several years of the projects proposed by the commissions.

There are two issues that are somewhat related that have resulted in a new and different situation. One is, as a result of the last amendments under a highway transportation bill, there was an interpretation by OMB, that was not the intent of the amendment, that has caused apportionments to the states to be reduced. It is going to be an issue that will affect the state programs for a while. The other is the administrative portion of the program has had some significant shortfalls. What that means to the Commission is that the FWS this year requested of that \$45,000 of the \$200,000 that they normally provide to the Commission on a January-December work year be returned to them, which the GSMFC agreed to do. That also translates into a reduction for the next two years. A letter was recently received indicating that the FWS will be prepared to provide the Commission with \$100,000 from the administrative program and allow the Commission to apply for an additional \$50,000 from reverted funds. The reverted funds program is made up of funding that the states were unable to use within the authorized amount of time. Reverted funds go into a special account and are made available for research projects. Lukens has asked Bob Cooke for some guidelines on applying for reverted funds; however, Cooke indicated that there are no clear guidelines. The Commission will not have to compete for reverted funds. When it comes to a research project that benefits fisheries, which is the general requirement for reverted funds, there has to be a defined research project. Lukens proposal to the Subcommittee is for the Commission to purchase computer assisted scan sonar equipment, including the computer, software, and the side scan equipment with appropriate shipping cases, to be housed in the Commission office and provided to the states to use. The state would have to come up with boat time. The project itself is two fold. The first objective is general data collection. The second, and most immediately important, is relocating sites with GPS technology. Almost all the sites that are currently on the NOS charts used converted LORAN coordinates. Job 1 should be relocating sites and validating that the materials are there. There would definitely have to have some training included. Initially, it would probably be best to focus on one state. Subsequently, other states could then use the equipment on a rotating basis.

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Lukens added that this is all speculation at this point, since requirements for submitting for reverted funds is unknown. Because of the nature of the project Lukens assumes that authorization would be received to do the project under the reverted program. This is being proposed at this point as a one year project. The equipment at the end of that project belongs to the FWS technically, but would be retained by the Commission. The Subcommittee decided that they liked the concept of this project and directed Lukens to go forward with putting it into a proposal for next year. To select which state to conduct the pilot project, Lukens asked each state coordinator to send him a general, very short proposal that would include what site or how many sites they would expect to survey, whether they can provide boat time and support on the boat, what types of material are on the site, and the general time frame for field work. Paul Hammerschmidt suggested that if a fallback state be selected in the event the project could not proceed due to weather conditions (hurricanes, etc.). Deadline for proposals to Lukens is Friday, July 16.

### “Colonization of a Low Profile Estuarine Artificial Reef”

Kirsten Larsen, a biologist at the Gulf Coast Research Laboratory, provided a brief summary of work to evaluate colonization of low profile oyster reefs in Mississippi Sound. Mississippi developed over twenty inshore low profile oyster shell reefs prior to 1995. Subsequent reef development has utilized limestone in conjunction with oyster shell or limestone alone. Colonization of reefs by invertebrates and vertebrates began immediately. Physical and chemical environmental factors in the area of the reef and the structural complexity of the reef may be related to the availability and size of “niches” provided by the oyster shell and limestone gravel. In this study, differences in the fauna were compared between two substrate types, limestone gravel and oyster shell.

#### Scope of project:

What fish are associated with inshore reefs?

Are fishermen utilizing the reefs?

How quickly are these reefs being colonized?

Are interstitial organisms being eaten by fish associated with the reef?

Trays containing limestone gravel or oyster shell were placed on an existing oyster shell reef in central Mississippi Sound. Eight plastic pallets with four trays each were placed on the reef. The trays on four pallets contained crushed limestone gravel, while four others contained oyster shell. After three months, the first set of trays was removed and brought back to the Gulf Coast Research Laboratory, where the contents of each tray were fixed in formalin and stored in ethyl alcohol. The total number and total weight of each species were recorded. Fifty individuals of each species were randomly selected and lengths (or widths) and weights recorded. Electronic calipers were used to measure lengths or widths to the nearest 0.1 mm, and an analytical balance was used to measure weight to the nearest 0.001 g. To test for significant differences in species colonization between the two substrates types, a Students' *t*-test ( $\alpha = 0.05$ ) was used to compare mean numbers and mean size (length or carapace weight) of each species present. Data were analyzed using a statistical software package.

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The project began in the spring of 1998, and the first 3 month substrate trays were retrieved in July. Unfortunately Hurricane Georges relocated all eight of the pallets in September and the samplers were redeployed in December 1998. Subsequent samplers were/will be removed after remaining in the water for various lengths of time.

In summary:

Some species appear to be substrate specific.

-speckled worm eel, toadfish

Relationship exists between size of fish and substrate.

-average size larger on oyster shell

For invertebrates, relationship between numbers/size and substrate type is species specific.

-no general trends.

The Subcommittee thanked Ms. Larsen for her presentation, and asked if she would be willing to return to the Subcommittee when the project is complete and provide a final report. She indicated that she would be glad to present to the Subcommittee at the appropriate time.

### **Discussion of National Artificial Reef Plan Revision**

Lukens reported that Bill Price (NMFS) has assured him that he is not expecting any radical changes in the draft document as a result of the NMFS internal review. NMFS has nearly finished an internal review, and Price reports that it was positive. They are going to craft it look like a federal document; consequently, they are going to change some of the language to reflect that format. The next step is for NMFS to incorporate all of the internal recommendations in preparation to send it out for full public comment, including all of the relevant federal agencies and the general public. Price noted that he is not expecting finalization on this until well into next year (2000). Lukens indicated that he would still like to budget in next year's grant an opportunity for the committees to get back together for a complete workshop to review the comments.

### **COE Meeting**

Richard Christian and Lukens went to the Corps of Engineers headquarters in Washington, DC and met with Kirk Stark and another gentleman. The purpose of which was to talk to them about the Corps regulatory program, recent issues that have arisen of a permitting nature, and to get an indication from them on how to deal with the many Corps districts. The different Corps districts act in a lot of ways as independent organizations. The Corps encourages that as a rule because they want to be able to have the flexibility to deal with issues that are in their district and not be constrained because another district does it differently. That is a good approach, except for things like the Corps regulatory program for artificial reefs because there are some fundamental things that probably need to be standardized or at least need to be approached in the same way. They did not have a lot of good suggestions on how to do that except to continue, as these permitting issues are refined, to interact with headquarters so they can establish agency wide policies. He said that is something that could

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be done. They were real positive about the meeting and want to have a number of subsequent meetings to follow up on where to go with this, what should be done, and will some of this require an amendment to the Act. Most of the issues tend to be regulatory in nature and will not require legislative amendment. In fact, most of them are already in the regulations, but are not being followed.

Regarding database issues Lukens has been trying to deal with unique identifiers and permit numbers. A lot of the information from the last meeting has not been incorporated into the database. Dodrill pointed out at the last meeting that there was a lot of duplication, especially in Florida's files. Tom Maher and Lukens went file by file and have reduced Florida's from 500+ entries to almost half of that because of duplicate entries. The steps working on now are the need to retain information from the older permit numbers because sizes do change, and location coordinates change. It was decided that this was going to be an active data base and would be only consist of active permits or those inactive permits which have not been renewed and that there would be a unique identifier for permits and that unique identifier would go back to the older permit where a separate database would be found. So when looking at a permitted area in the database, there is the unique identifier, go into this other database and call up that unique identifier and may have three or four records of where it has been amended over time with all the data that goes with that. That is how it is planned to be handled until it can get into some kind of relational database situation. To get to the issue with the Corp, in order to be able to establish unique identifiers the permit number can not change or if the permit number does change the program coordinator would have to be attuned to that and be able to assign that unique identifier to the new permit number to retain the link. That is the key. That is one of the issues that needs to be addressed with the Corps to find out what the protocol is from district to district about assigning permit numbers and is it possible to retain permit numbers.

Associated with the database, Lukens mentioned that he has vastly underestimated the amount of time that is needed to work on. Consequently, not much has been done with it. In next year's proposal plans are to actually reduce the number of individual project type items included to be able to justify needing to spend more time working with this database to get it into shape. In doing that, Lukens plans to work with the database manager in the Commission office.

The last item here is late breaking and it came from the New York Corps District office. They have been working over the past number of years with Steve Heins and Bill Figley. As a result of that working relationship that office sent a proposed plan for artificial reefs in that area to Heins and Figley for their comment. It unveiled some rather significant items. Several years ago the Corps Mobile District got authorization through an amendment to the Water Resources Development Act to build a stable burn off Mobile Bay. When dredging down the channel they normally distribute the dredge material along the sides of the channel rather than mounding it up on barges and taking it off somewhere. This has for a variety of reasons become problematic so they are looking for other ways to do that. On top of that in the last Water Resources Act amendments Section 206 which requires consideration of beneficial uses of dredge material and Section 207 which deals with aquatic ecosystem restoration and enhancement were included. The Corps are being required by law to do these things. Lukens went on to discuss a paper by Doug Clark from the Vicksburg Corps office

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which he explores the habitat value of offshore dredge material burns for fisheries resources, which is a good thing. Clark indicated that if the Corps is going to this then they should make it resource friendly so it has some habitat value. Where Lukens feels he went apart from good thinking, and he acknowledges that in here, is that he is associating that stable burn with artificial reefs. He is calling, in a sense, that stable burn an artificial reef. Lukens fundamentally disagrees with that for a couple of reasons. One is the same effect is received where you have a slope in a dredge channel, and that is not called an artificial reef. It is a topographic feature. It is comprised of what they call consolidated sediment dredge material. The Corps primary function is to do something with that dredge material, not to make artificial reefs. Artificial reefs are also thought of as altering habitat in a habitat limited situation for obligate structured organisms, in other words fish that require that kind of structure as a part of their life cycle. While that stable burn may have some attractive features for fish, estuarine associated species, it is not an obligatory part of their habitat. If that burn is not there they are going to be out there anyway. It would be a stretch to say that that will contribute to production. If that could be said then that is another issue. Clark says direct comparison between artificial reefs and stable burns constructed of dredge material are somewhat difficult to make. The case he is trying to make here is that if there are going to do stable burns they should at least try and make them beneficial to fishery resources. Next he says, it seems inevitable that substantial quantities of dredge material will be placed offshore in the foreseeable future. In this regard he is saying in that management of offshore disposal sites it would help to dispel environmental concerns about the long term consequences of offshore disposal if they can show that there are positive natural resource benefits. That is what he is trying to get at. He has, however, made this reference to artificial reefs in here. That was in 1994 and now in 1999 the New York District stated it would be a good idea to make artificial reefs out of dredge material. Another issue is that the Corp is moving from being a regulatory agency that permits artificial reefs to being an agency that constructs artificial reefs, and those are two completely different roles. Through this plan they make references based on the COE success in building stable burns, citing Doug Clark's paper, and the potential for habitat value to accrue from those burns and possibilities such burns consuming several million cubic yards of dredge material, the option of using dredge material to build artificial reefs should be investigated further. While rocky material is clearly suitable for artificial reefs it is unclear whether stable burns would provide habitat value in addition to shore protection benefits. They even acknowledge that it is kind of stretching it but they are proposing it. If the results of the studies are favorable any sediment that will form large mounds will be acceptable. The States of New York and New Jersey historically have supported artificial reefs made of rock, but may not necessarily support reefs made of sediment.

They do not. There have been letters from both Steve Heins and Bill Figley coordinated with Richard Christian to that effect. In communication to the Corps it was pointed out the Corps own definition "33 CFR 322.2" definition g. the term artificial reef means a structure which is constructed or placed in the navigable waters of the United States or in waters overlying the Continental Shelf for the purpose of enhancing fishery resources and commercial and recreational fisheries. Further it says, the term does not include activities or structures such as wind deflectors, bank stabilization, grade stabilization structures or low flow keyways, all of which may be useful to enhance fisheries. So in the Corps own regulatory documentation they say stable burns are not artificial reefs and yet the New York District is proposing to use this sediment material to build artificial reefs. Stable burns should

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not be called artificial reefs and should be separated from artificial reef programs. The Corps objective is not to create artificial habitat for reef obligate species, it is to get rid of some dredge material while at the same time making it beneficial to natural resources. Lukens feels that anytime a Corps district wants to engage in artificial reef development activities they should coordinate and cooperate with the state program within their district. The programs should get them to agree to do this. Figley agreed that is a great idea except for one thing, he is afraid that if the Corps buys into that idea they may use that as mitigation for other programs. That is an issue to keep in mind. Also the Corps should be made aware that consolidated sediment dredge material should not be considered artificial reef material. If a stable burn is to be used to deposit dredge material it should be done such that it enhances living resources but should not be called an artificial reef. This could come in the form of a recommendation from the collective states. If the Corps want to engage in artificial reef development activities as a way to comply with their legislative mandates and to find a disposition for dredge material they should provide some funding for monitoring activities. Finally, there is the need to clarify and highlight the Corps definition of artificial reefs such that they recognize as their regulations states that a stable burn is not an artificial reef.

After some discussion, Lukens sensed that it would be premature to actually make any recommendation at this time. Bill Figley expressed an interest in having the joint committee look at these issues. The Subcommittee agreed.

#### **Artificial Reefs as Sanctuaries**

M. Bell brought the Subcommittee up to date on the South Atlantic Fisheries Management Council's interest and consideration of marine reserves. The Council has a Marine Reserves Advisory Panel and a Marine Reserves Committee and Bell indicated that he has been able to talk to both of those groups. They have a huge agenda and are considering sources of hard data that indicate that marine reserves might be useful as a fisheries management concept or that they may not be. One of the big problems they face is in order to test the concepts of a marine reserve a marine reserve is needed, but data is needed to have a marine reserve. This is where in order to test the concepts, man made reefs or artificial reefs are extremely useful to them. Bell basically talked to them about artificial reefs and how they work, and how they are similar to natural bottoms that might be eventually included in marine reserve areas. Part of what he did was get them to understand that it is called an artificial reef but the reef itself functions just like a natural hard bottom area. The artificial part of it is the fact that man, and not nature, placed some sort of hard substrate out there. Bell then gave the Subcommittee a slide presentation on this topic. This discussion was just to let the Subcommittee know that the South Atlantic Council is really embracing this concept of at least looking into marine reserves. Bell believes that in the next couple of years, at least in the South Atlantic, this is going to become a big issue with public hearings, educational campaigns, and hopefully some solid data collection. Bell agreed to keep the Subcommittee abreast of these activities.

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#### Other Business

J. Culbertson inquired about the Texas samplers involved in the QuanTech study which was funded by MMS. Lukens responded that he did not know, but the final resolution of the issue the Subcommittee discussed at the previous meeting was the Commission decided they did not want to collect the data for QuanTech. L. Dauterive also responded that he did not know the status of the project. Lukens and Dauterive to follow up on it.

Lukens discussed the possibility of hold a joint meeting to discuss the COE issues which were previously discussed. Lukens talked to Richard Christian and he agreed that it should be pursued. The Subcommittee agreed that the joint meetings are very productive and Lukens should investigate the possibility of funding for a joint meeting and a central location. In the event a joint meeting can not be arranged the Subcommittee would hold a Subcommittee meeting in Louisiana either in late 1999 or early 2000.

Lukens once again discussed the publication of state project reports. The name of the publication is to be "*Reef Monitoring Studies of the Gulf and Atlantic States.*" The objective is to publish scientifically collected and analyzed information on the stability, durability, compatibility, and functionality of reef structures; the ecology and biology of reef communities; the socio-economics and harvest of reef resources and other topics related to the construction and management of marine artificial reefs for use by reef managers and scientists in assessing the function and value of artificial reefs and better managing of reef resources. The publication would include studies either conducted or contracted by state agencies that have not been otherwise published in scientific journals.

At this time Lukens has only received three articles. This is not enough for publishing. When Lukens has a total of 5 articles, he will go forward with publishing. He once again stressed that he needs feedback from the Subcommittee.

**There being no further business, the meeting adjourned at 4:50 pm.**



ComFIN Implementation Meetings  
Meeting Summary  
July 6 - 8, 1999

The meetings were held over three days. Although the meetings were separate, the summary contains the issues discussed at all the meetings. The following people were present:

Joey Shepard, LDWF, Baton Rouge, LA  
Page Campbell, TPWD, Rockport, TX  
Kevin Anson, AMRD, Gulf Shores, AL  
Barry Roberts, AMRD, Gulf Shores, AL  
Noel Estes, AMRD, Gulf Shores, AL  
Christine Johnson, MDMR, Biloxi, MS  
René Labadens, NMFS, Pascagoula, MS  
John Poffenberger, NMFS, Miami, FL  
Guy Davenport, NMFS, Miami, FL  
Ron Lukens, GSMFC, Ocean Springs, MS  
Dave Donaldson, GSMFC, Ocean Springs, MS

D. Donaldson stated that the purpose of the meetings was to get all the players involved in commercial data collection activities in the Gulf of Mexico and discuss who is to be responsible for the various tasks involved in the collection and management of these data. D. Donaldson provided an overview of the RecFIN(SE)/ComFIN which outlined the overall program as well as compared what is currently being done versus the long-term goal for commercial data collection.

After the presentation, the following items were discussed by the group:

- It was stated that the trip ticket program is the backbone to the ComFIN. The first step in implementation of the ComFIN is the initiation of trip ticket programs in each state in the Gulf of Mexico. It is essential that each state have a trip ticket program to ensure that all landings are captured.
- It was suggested that some side-by-side activity between the current data collection (monthly landings) and the trip ticket be conducted for a specified time period. When Florida implemented their trip ticket program, they conducted side-by-side comparisons for two years to ensure that the data being collected by the two programs were the same.
- It was stressed that the port agent system is very important and still plays an integral role in ComFIN. Although the landings information will be captured via the trip ticket, the portsamplers will still be necessary to collect such information as detailed effort (where not captured on the trip ticket), biological sampling, social/economic data, and discards information. In Texas and Mississippi, there is a need for additional port samplers to conduct the necessary data collection activities. There was a stated need for increased biological sampling in Texas. This issue will be addressed during the development of the FY2000 cooperative agreement for FIN.
- The Gulf States Marine Fisheries Commission (GSMFC) will be the data warehouse for the Gulf of Mexico. It was also suggested that the GSMFC act as a centralized repository for all the dealers similar to the charter boat vessel frame. The GSMFC would be responsible for maintaining the data base and the states would be responsible for providing updates to the dealer information.

- Since several of the states are beginning the implementation of trip ticket programs and Louisiana and Florida already have operational program, it was discussed and decided that there needs to be a workshop regarding establishing and maintaining a trip ticket program. The workshop will focus on the steps Florida and Louisiana took to implement their programs, problems and issues encountered, pros and cons about the way their systems are set up, costs of operation, etc. This workshop will be held during the Annual Fall GSMFC meeting at the Data Management Subcommittee meeting.

- The group discussed the issue of quota monitoring. It was decided that this issue needs to be further explored by the FIN Committee at their upcoming fall meeting. The partners need to develop a list of species that are currently monitored by quota. Alabama stated that they currently do not quota monitor any species. Mississippi stated that they have a quota for red drum and speckled trout. Also, the Committee needs to discuss what the expectation of a FIN quota monitoring system would be: estimation of fish or total count of fish.

- The issue of continued funding for commercial activities in the Southeast Region was discussed. There was concern that because of the initiation of trip ticket programs in the Gulf of Mexico, there might be the perception that the current funding for the Cooperative Statistics Program (CSP) could be utilized for other activities, possibly outside of the Region. It was pointed out that this is not the case and there is still the need for funding. Although the funds may not be used for current CSP activities, the money is essential to the collection of commercial data. It was decided that a schematic be developed (and incorporated into the State/Federal Fisheries Management Committee presentation) that outlines the amount of funds needs for all the commercial data collection activities in the Southeast. This could be used as rationale for keeping funding in the Southeast for commercial data collection.

- The group discussed the need for periodic meetings of the port samplers. Last year, there was a port sampler meeting in Tampa and was very successful. Unfortunately, there was not sufficient travel funds for the federal port agents; consequently, there was not a port samplers meeting this year. It was noted that, as justification for securing funding, these meetings are actually part of the quality assurance/quality control aspects of the ComFIN. The meetings allow for interaction among the samplers and provides them a forum to discuss data collection methods, problems encountered in the field and potential solutions, and other related issues.

- The group discussed the data management aspects of the ComFIN and the fact that this system will be housed at the GSMFC. The issue of how this will affect the NMFS-Miami data management facility was discussed, and it was pointed out that although the ComFIN data management system will house the regional data, there is still a need for NMFS data management capabilities. However, it was noted that by establishing a regional data warehouse at the GSMFC, there will be some freeing up of NMFS staff to focus on other aspects of the program.

- It was noted that there needs to be a firm commitment from each state regarding the implementation of a trip ticket program. Texas has some concern about implementation of such a program and there needs to be discussion by state personnel to ensure this is the method for collecting commercial data that should be used.

- The group discussed the pilot charter boat survey being conducted in Louisiana, Mississippi, Alabama, and Florida. Texas is interested in the results of this pilot and is examining the possibility of implementing a similar methodology for their for-hire fishery. During this discussion, the idea of viewing the for-hire fishery as a separate sector was discussed, and the group agreed that the FIN Committee should address this issue at the upcoming meeting. This issue should be addressed in terms of a data collection and not an allocation issue.

- Alabama is attempting to have a pilot trip ticket program implemented by January 2000. They (as well as Mississippi) will use scanning technologies (similar to Louisiana's system) for entering the data. Another issue discussed concerned electronic reporting of the data. It was stated that there are some dealers (usually the high-volume dealers) who would be able and are actually interested in utilizing this technology for reporting the data. This issue will be pursued by the states and periodic updates to the FIN will be provided.
- The group discussed legislative issues regarding the implementation of a trip ticket program. Obviously, Louisiana and Florida have adequate laws and regulations to allow for the implementation of such a system. Alabama's current laws and regulations are also adequate to allow for a trip ticket program. However, it appears that although the laws and regulations in Mississippi give the authority to collect data about commercial fishing activities, they place the onus on the Department to collect this information and not require the dealers to report these data. Mississippi is exploring this issue and will make the necessary changes to allow for implementation of the program.
- There was concern by Mississippi and Alabama about compliance with the trip ticket program. It was noted that an integral part of this program is interaction with the dealers and fishermen to ensure that there is "buy-in" from the industry. It is important to involve the dealers and fishermen so that they are part of the process of developing the program. Without the support of industry, the trip ticket programs will not be successful.

## STOCK ASSESSMENT TEAM MEETING MINUTES

July 21-22, 1999

New Orleans, Louisiana

Chairman Joey Shepard called the meeting to order at 1:06 p.m. on Wednesday, July 21, 1999. The following participants were in attendance:

### Members

Joey Shepard, *Chairman*, LDWF, Baton Rouge, LA  
Jim Duffy, ADCNR/MRD, Dauphin Island, AL  
Mark Fisher, TPWD, Austin, TX (*proxy for Billy Fuls*)  
Behzad Mahmoudi, FMRI, St. Petersburg, FL  
Bob Muller, FMRI, St. Petersburg, FL  
Mike Murphy, FMRI, St. Petersburg, FL  
James R. "Tut" Warren, USM/IMS/GCRL, Ocean Springs, MS

### Others

Butch Pellegrin, NMFS, Pascagoula, MS  
Harriet Perry, USM/IMS/GCRL, Ocean Springs, MS  
Doug Vaughan, NMFS, Beaufort, NC

### Staff

Steve VanderKooy, Program Coordinator, Ocean Springs, MS  
Cindy Yocom, Staff Assistant, Ocean Springs, MS

### Adoption of Agenda

Bob Muller made a motion to move item 5, *Overview and Discussion of the Blue Crab Stock Assessment*, to the last order of business. The motion was seconded by Mike Murphy, and the revised agenda was adopted.

### Approval of Minutes

Minutes of the meeting held March 3-4, 1998 in Pensacola, Florida, were deferred until the next meeting.

### Overview and Discussion of the Gulf Menhaden Stock Assessment

D. Vaughan distributed a copy of NOAA Technical Report NMFS 125 (February 1996) on "Population Characteristics of Gulf menhaden, *Brevoortia patronus*" to compare against the current stock assessment, April 1999 (Attachment 1). The current assessment updated: 1) catch, effort, and growth; 2) the catch at age matrix; 3) environmental factors and abundance surveys; and 4) a calibrated VPA (attempted but unsuccessful). The stock assessment shows that a catch and effort



pattern started low right after World War I and peaked in the 1980s. This is primarily driven by recruitment. A separable VPA shows a break in 1975. The spawning potential ratio for Gulf menhaden from 1976-1997 is based on mature female biomass. Estimates of catchability were derived using fishing mortality estimates and nominal effort. The Que seems to be inversely related to population size. The statistically significant correlation was improved in the change in recruits at age 0 with Delta river flow versus Delta flow. A significant correlation in juvenile abundance data from Texas and Louisiana was summarized. Research/data needs include a multi-aged older index and maturity, reproduction, and fecundity data.

#### Update on the Otolith Handbook

S. VanderKooy reported that no comments were received on the December 1997 draft, and the initiative has stalled. J. Shepard reminded the group that this effort originated within the SAT and was an attempt to standardize procedures on gulf species. The manual would have photos of all important gulf species. The original thought was to get the manual in place and have training sessions using the manual. M. Murphy took the lead on the project and developed an outline. This was sent to regional experts, and using their comments, the document was drafted. M. Murphy noted that he no longer has time to devote to this project.

J. Duffy suggested state representatives that are actually cutting/reading otoliths could meet to put this document together if funding was available. He further suggested that work sessions could be held at different state labs throughout the gulf. Discussion continued and a general outline of work developed. The SAT proposed a two-year effort consisting of six meetings total. The work group would consist of two state representatives (directly involved in otolith cutting/reading) from each of the Gulf States. In the first year of the project, an organizational meeting would be held along with two meetings at different state laboratories. The second year would involve three meetings at the remaining state laboratories. The SAT agreed that Jim Duffy could take the lead as the Otolith Handbook Work Group leader. Each state SAT representative will send in the names of two state representatives (and their boss). J. Duffy and S. VanderKooy will work together on the proposal and budget for this effort which could begin as early as January 2000. J. Shepard suggested the FIN project could be a funding source for this effort. S. VanderKooy agreed to investigate funding sources.

#### Undergraduate and Graduate Stock Assessment Curriculum

S. VanderKooy reported to the SAT that the S-FFMC were concerned about the direction they were taking on stock assessment training (i.e., a summer course format provided through universities). The group asked the SAT to survey universities to find out what they are actually teaching in their fisheries curriculum on assessing stocks. The SAT concluded that a miscommunication had occurred and stated that with the exception of additional math courses and years of experience assessing stocks, current fisheries students could not be trained any better by the time they matriculate. The SAT agreed that an endeavor to enhance university curriculum was indeed, off track. Further, the continuing education of state stock assessors could be taken care of in workshop format utilizing the training facilities operated by the NMFS and the University of Miami Cooperative Institute of Fisheries Management and Education. The SAT suggested the GSMFC



contact Lisa Kline (ASMFC) and Joe Powers from the Institute to set up joint workshops with the Atlantic Commission. These workshops could provide an introduction to newer or less-experienced staff and keep existing stock assessors current on new models and techniques. The SAT noted that approximately four workshops (one week each) would be a sufficient amount of time to complete a beginning-to-end stock assessment curriculum. The SAT suggested two workshops per year for two years. B. Mahmoudi volunteered to contact J. Powers and report back to S. VanderKooy who, in the mean time, will contact L. Kline.

### Overview and Discussion of the Blue Crab Stock Assessment

B. Pellegrin reported this species has very limited data on which to perform a stock assessment (see Attachment 2). There is no age structure for the species; there are no fishery-dependent data. Even the landings data had problems; do the landings actually reflect what is happening in the fishery?

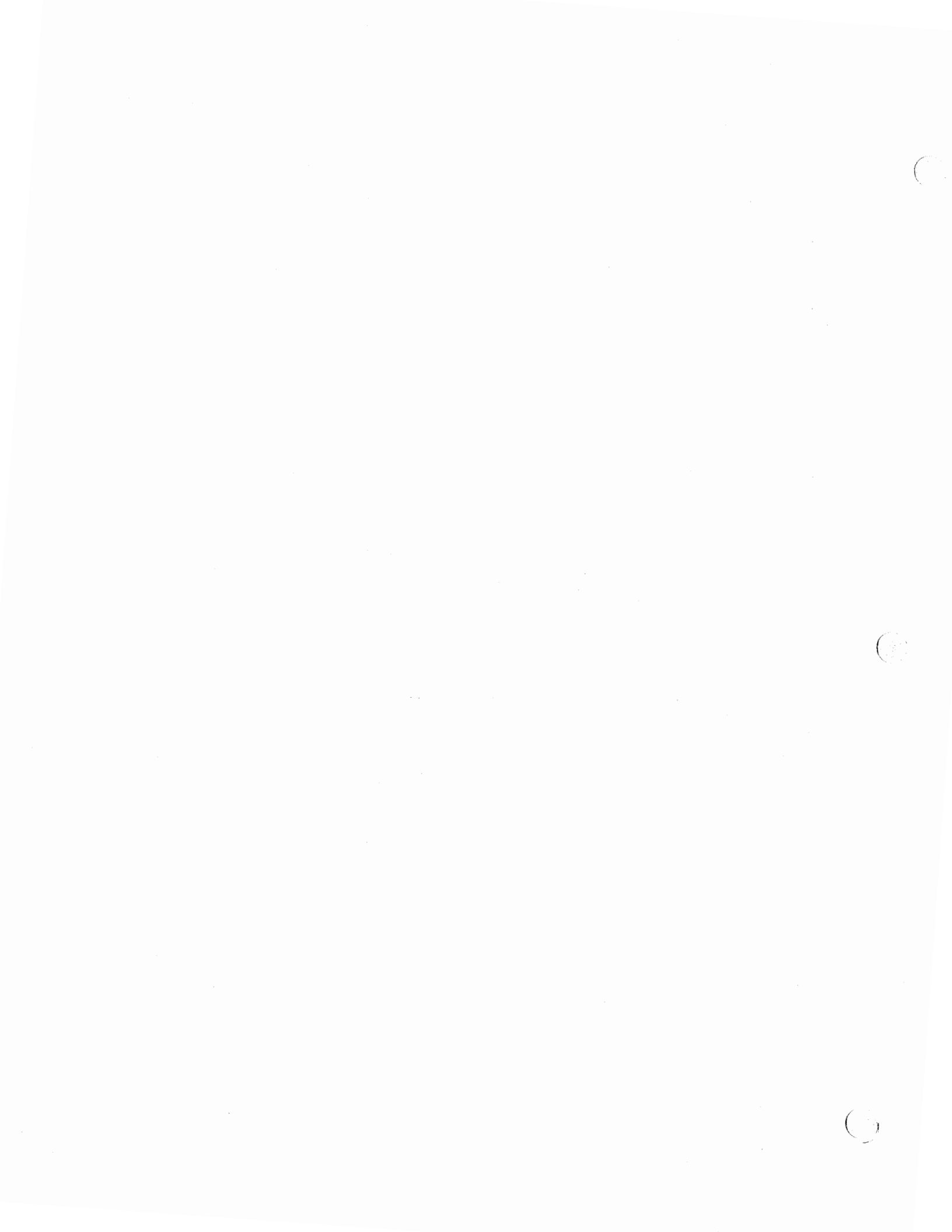
B. Muller noted that the stock assessment really argues that the right kind of data need to be collected in order to perform an adequate assessment. The exercise is a good one, but the sum-up basically says there are not enough data to do a proper job.

H. Perry responded that the task force did have reservations about the stock assessment and does not want current results to "end up written in stone." She agreed that fishery-dependent data is necessary and has advocated the collection of this data for years. Good indices of the pre-recruit phase are needed, and landings data are also problematic. She referred to "Toyota" crabs (i.e. animals are caught, thrown in the truck, and down the road they go without being reported).

B. Muller suggested getting the caveats up front. There are a wide range of landings with mortality estimates being the same; the age approach wasn't appropriate. The non-age approach would be a better starting point. B. Mahmoudi noted that landings are key component, and those are not even reliable. He suggested the group simply describe the status of the fishery based on annual trends and estimated abundance. Use the management unit approach (north central gulf, Texas, Louisiana) rather than a regional approach. Use landings, but note that they are under reported. Emphasize within this section exactly what data are needed to perform a good stock assessment including sex ratios, sizes, size distribution of females, terminal molt, etc. A surplus production approach would probably be more appropriate for this fishery.

The SAT and representatives from the task force agreed to revise their approach. Fishery-independent data will be used, but a basic overview of trends will be offered. The SAT will provide additional data sets to B. Pellegrin. M. Fisher noted that Texas needs a written request for any data. B. Muller will send a SAS data set to Butch, and J. Shepard will send landings (east/west of river). This process should move quickly, but the revised document will not be available before the October meeting. S. VanderKooy stated that he will report to the TCC and let them know that they will not be acting on the FMP at the October meeting.





Other Business

J. Duffy asked what is the status of the Seatrout FMP? S. VanderKooy explained the FMP is under TCC review. Action is expected their October meeting, and hopefully, the plan will move to the S-FFMC for approval.

S. VanderKooy asked the state representatives to send a list of stock assessments that have been performed in each state.

**There being no further business, the meeting was adjourned Thursday, July 22, 1999 at 12:00 noon.**



Population Characteristics of Gulf Menhaden,

*Brevoortia patronus*

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**ABSTRACT**

The status of the gulf menhaden, *Brevoortia patronus*, fishery was assessed with purse-seine landings data from 1946 to 1997 and port sampling data from 1964 to 1997. These data were analyzed to determine growth rates, biological reference points for fishing mortality from yield per recruit and maximum spawning potential analyses, spawner-recruit relationships, and maximum sustainable yield (MSY). The separable virtual population approach was used for the period 1976-1997 (augmented by earlier analyses for 1964-1975) to obtain point estimates of stock size, recruits to age 1, spawning stock size, and fishing mortality rates. Exploitation rates for age-1 fish ranged between 11% and 45%, for age-2 fish between 32% and 72%, and for age-3 fish between 32% and 76%. Biological reference points from yield per recruit ( $F_{0.1}$ : 1.5-2.5 yr<sup>-1</sup>) and spawning potential ratio ( $F_{20}$ : 1.3-1.9 yr<sup>-1</sup> and  $F_{30}$ : 0.8-1.2 yr<sup>-1</sup>) were obtained for comparison with recent estimates of  $F$  (0.6-0.8 yr<sup>-1</sup>). Recent spawning stock estimates (as biomass or eggs) are above the long-term average, while recent recruits to age 1 are comparable to the long-term average. Parameters from Ricker-type spawner-recruit relations were estimated, although considerable unexplained variability remained. Recent survival to age 1 recruitment has generally been below that expected based on the Ricker spawner-recruit relation. Estimates of long-term MSY from PRODFIT and ASPIC

~~estimation of production model~~ ranged between 717,000 t and 753,000 t, respectively. Declines in landings between 1988 and 1992 raised concerns about the status of the gulf menhaden stock. Landings have fluctuated without trend since 1992, averaging about 571,000 t. However, gulf menhaden are short lived and highly fecund. Thus, variation in recruitment to age 1, largely mediated by environmental conditions, influences fishing success over the next two years (as age-1 and -2 fish). Comparisons of recent estimates of fishing mortality to biological reference points do not suggest overfishing.

## INTRODUCTION

Gulf menhaden, *Brevoortia patronus*, is a euryhaline species found in coastal and inland tidal waters from the Yucatan Peninsula in Mexico to Tampa Bay, Florida (Nelson and Ahrenholz, 1986; Christmas et al., 1988). Adult menhaden are filter feeders (feeding primarily on phytoplankton) and, in turn, support predatory food fishes. Gulf menhaden form large surface schools which appear in near shore Gulf waters from about April to November. Although no extensive coast wide migrations are known to occur, there is evidence that older fish move toward the Mississippi River delta (Ahrenholz, 1981). Spawning peaks during December and January in offshore waters (Lewis and Roithmayr, 1981). Eggs hatch at sea and the larvae are carried to estuaries by ocean currents where they develop into juveniles (Christmas et al., 1988). Juveniles migrate offshore during winter and move back to coastal waters the following spring as age-1 adults.

Gulf menhaden are subject to an extensive purse-seine fishery in the northern Gulf of Mexico from mid-April through November 1 as regulated by interstate compact (Leard et al., 1995). Since 1964, NOAA's National Marine Fisheries Service has maintained a sampling program for gulf menhaden. During this period the number of active reduction plants where menhaden are processed for meal and oil has varied between 5 and 14, with 5



plants active in 1997 (Table 1). The number of purse-seine vessels has varied between 51 and 92, with 52 vessels active during the 1997 fishing season. Annual landings and nominal fishing effort in vessel-ton-weeks (vtw), available since 1946, show an upward trend in landings from 1946 through 1984 when landings peaked at 982,800 t (Fig. 1). Nominal effort peaked the previous year (1983) at 655,800 vessel-ton-weeks. Landings and nominal effort then declined to 421,400 t and 408,000 vessel-ton-weeks in 1992, respectively. Between 1984 and 1992, the number of reduction plants declined from 11 to 6 and the number of purse-seine vessels from 81 to 51. Since 1992, landings have varied between 463,900 and 761,600 t, while effort has varied between 417,000 and 472,000 vessel-ton-weeks without apparent trend.

Detailed information on daily vessel landings and fish sampled for length, weight, and age (from scales) is available from 1964 to the present. This information is used to estimate the number of fish landed at age, 1964-1997 (Table 2). A new computer program for estimating catch at age was developed during 1996-1997 and re-estimation of catch in numbers at age based on this program was done for 1985-1997. The fishery depends primarily on age 1 (comprising 35% to 92% of the landings) and age-2 fish (7% to 62%) (Fig. 2). The remaining ages (age-0, -3, and -4+) generally contribute insignificantly to the landings (<1% to 13%), although age-3 contributed 10% in 1975. Age-2

production models are estimated (with annual landings data using PRODFIT and ASPIC). Estimates of recruitment are compared to juvenile abundance data recently made available from Louisiana and Texas, and to several environmental factors. The results from these models are used to evaluate the status of the gulf menhaden stock.

## VIRTUAL POPULATION ANALYSES

The results from two methods of virtual population analysis (VPA) are used in this assessment. The first method, that of Murphy (1965), is described in Vaughan (1987) and is used for 1964-1975. The second method, that of Doubleday (1976), is referred to as 'separable' VPA and is applied to more recent years, 1976-1997; it assumes that age- and year-specific estimates of  $F$  can be partitioned into the product of an age component (partial recruitment) and a year component. We used the computer program (SVPA.EXE) as modified by Clay (1990) from Pope and Shepherd (1982). This method was applied to the catch-in-numbers-at-age matrix (or catch matrix) based on annual ages (not quarterly ages as in the Murphy VPA).

Because Vaughan et al. (1996) demonstrated that the two VPA approaches (Murphy VPA and separable VPA) gave similar results for the period 1976-1992, the latter approach was used for updating the period 1993-1997. Additional separable VPA runs were made to explore the plausibility of the separable assumption for the period 1976-1997. Inspection of the approximate coefficient of variation (CV) and sum of squared deviations (SSQ) (output produced by SVPA.EXE program), when plotted against initial year of data appearing in the catch matrix (Fig. 3), suggested that the separable assumption continued to be

reasonable when extending the catch matrix (1976-1992) to 1997. See Vaughan et al. (1996) for discussion of possible causes for this discontinuity in CV and SSQ.

A new method for estimating catch-in-numbers at age was developed which uses a more statistically-rigorous approach to filling missing port/week combinations for which sampling was unavailable. A general linear model (GLM) approach was used to estimate catch-in-numbers at age for each port and week combination throughout the fishing year based on season (quarterly) and NMFS area (east and west of Mississippi River) using length, weight and age structure information, rather than ad hoc approaches previously used. Sensitivity of VPA output to the change in catch-at-age estimation procedure (which overlaps for 1985-1994) was explored. Only small differences are noted in estimates of weighted mean  $F$  (ages 1-4 with  $M=1.1$ ) and recruitment to age 1 (except 1993 and 1994) (Fig. 4a-b).

An estimate for natural mortality ( $M$ ) of  $1.1 \text{ yr}^{-1}$  was used in previous assessments (Nelson and Ahrenholz, 1986; Vaughan, 1987; Vaughan et al., 1996). As noted in Vaughan et al. (1996), estimates of  $M$  based on tagging studies range from 0.7 to 1.6. Life history approaches provide estimates of  $M$  that range from 0.9 to 1.1 based on Pauly (1979) using mean temperature and von Bertalanffy growth parameters, and 0.7 to 1.1 based on Hoenig (1983) using maximum age. As noted in Vaughan et al. (1996), life history approaches for estimating  $M$  do not reflect

additional mortality due to other sources (e.g., losses to a small bait fishery or as bycatch in other fisheries). Hence, most analyses that follow assume  $M = 1.1$ , although sensitivity runs are made with  $M = 0.8, 0.9, \text{ and } 1.0$ .

For comparison with and as a continuation of Vaughan et al. (1996), exploitation rates  $u$  [proportion removed annually]:

$$u = F(1 - e^{-Z})/Z, \quad (1)$$

where  $Z$  is the total instantaneous mortality rate ( $M+F$ ) for ages 1, 2, and 3, and ages 1-4 combined are plotted against year based on the Murphy VPA (from Vaughan et al., 1996) for 1964-1975 and separable VPA for 1976-1997 (Fig. 5). Exploitation rates for each age and ages 1-4 combined generally have declined since 1964. Exploitation rates for age-1 fish ranged between 11% in 1995 and 45% in 1966; ranges for age-2 fish were between 32% in 1995 and 72% in 1966; and for age-3 fish were between 32% in 1995 and 76% in 1975. Overall exploitation rates (ages 1-4) ranged between 16% in 1995 and 52% in 1966.

To investigate sensitivity of fishing mortality estimates ( $F$ ) to assumed values of natural mortality, additional estimates of fishing mortality were made using the separable VPA with lower estimates of  $M$  (0.8, 0.9 and 1.0). Estimates of annual weighted mean  $F$  are compared between estimates of  $M$  for 0.8, 0.9, 1.0 and

~~1.1 from SVPA on the catch matrix~~ (Fig. 6a). As M is decreased, consistently higher estimates of annual weighted mean F are obtained. Although differences are small, they are significant, especially if the present value of M is a gross overestimate ( $\ll 0.8$  compared to 1.1). During the period 1976-1997, weighted (by catch in numbers) mean fishing mortality (ages 1-4) from the separable VPA (with  $M=1.1$ ) ranged between 0.16 in 1995 and 0.42 in 1988.

Recruitment to age 1 was generally high and variable between 1976 and 1988, but has been lower and less variable since then (Fig. 7a). Because age-1 menhaden form a large component of the population size, the total population (ages 1-4) shows a similar pattern. On average, recruitment to age 1 was highest during the 1980s, with 41.1 billion recruits to age 1 in 1985.

Retrospective analyses also were conducted to determine uncertainty in recent VPA output estimates, although not as detailed as presented for Atlantic menhaden in Cadrin and Vaughan (1997). Retrospective analyses were run with separable VPA by parallel runs deleting the most recent year (initial year was always 1976). Terminal F value was obtained from a catch curve analysis on the cohort that was age 4 in the final year.

Although the retrospective error in F (Fig. 6b) and recruits to age 1 (Fig. 7b) were occasionally large, the error is generally without bias as was found for Atlantic menhaden. Typical of retrospective error with large total mortality, this error tends

to disappear after a few years. Hence, retrospective error is largest for the most recent 2-3 years of the analyses.

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**SIZE AT AGE AND GROWTH ANALYSES**


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Interpolated lengths and weights of gulf menhaden at age are needed for estimating optimum fishing yield and spawning stock biomass. Estimates of annual mean weight-at-age for gulf menhaden in the purse-seine catches were calculated to determine any trends in yield-per-recruit that could be expected in the fishery. No specific upward or downward trends in mean weight-at-age are noted (Fig. 8).

Weight ( $W$ , in g) is estimated from the weight-length relationship expressed in the linear form of the power function,

$$\ln W = \ln a + b \ln L, \quad (2)$$

where  $L$  is fork length (mm), and  $\ln a$  and  $b$  are parameters estimated by linear regression for each fishing year (Table 3). A correction factor ( $\sigma^2/2$ ), where  $\sigma^2$  is the variance, based on the mean squared error (MSE) was used when retransforming from  $\ln W$  to  $W$  based on properties of the lognormal distribution (Beauchamp and Olson, 1973).

Fork length ( $L$ , in mm) can be estimated from age ( $t$ , in yr) on the basis of the von Bertalanffy (1938) growth equation,

$$L_t = L_\infty(1 - \exp(-K(t - t_0))), \quad (3)$$



where  $L_{\infty}$ ,  $K$ , and  $t_0$  are parameters that in this case were estimated by nonlinear regression (PROC NLIN, MARQUARDT OPTION, SAS Institute Inc., 1987). The maximum length ( $L_{\infty}$ ) is approached asymptotically, at a rate described by parameter  $K$ , with  $t_0$  shifting the curve to the left or right. Annual estimates are based on all individual fish weighted by the inverse of numbers of fish in sample at age to improve convergence and correct for parameter bias and poor precision resulting from too few older fish compared to large numbers of young fish noted in Vaughan and Kanciruk (1982) (Table 4). Converged estimates of  $L_{\infty}$  ranged from 216 mm to 745 mm in fork length, with a median value of 241 mm and an interquartile range (middle 50%) between 232 and 278 mm. Converged estimates of  $K$  ranged from 0.06 to 0.84  $\text{yr}^{-1}$ , with a median value of 0.41 and interquartile range between 0.29 and 0.51  $\text{yr}^{-1}$ . One should note that because of the typically high correlations among the parameters, ranges in estimates of  $L_{\infty}$  and  $K$  can give an exaggerated impression of their variability.

**BIOLOGICAL REFERENCE POINTS FOR FISHING MORTALITY**

Two modeling approaches are used to estimate biological reference points based on fishing mortality rates to assess whether these estimated rates are too high. Reference points from the first modeling approach (yield-per-recruit analysis) have been used for several decades, while those from the second modeling approach (spawning-stock-biomass-per-recruit) have been used recently by the fishery management councils and commissions.

**Yield-per-Recruit Analysis.** The trade off between decreasing numbers of fish and increasing biomass per average individual fish forms the conceptual basis for yield-per-recruit analysis. The Ricker (1975; eq. 10.4) formulation was used for estimating yield per recruit [this was the basis for MAREA used in previous gulf menhaden stock assessments (Nelson and Ahrenholz, 1986; Vaughan, 1987)]. Data required includes age-specific estimates of fishing mortality (from VPA) and weight (relationships given in Tables 3 and 4). Yield per recruit for gulf menhaden was estimated from estimates of fishing for 1976-1997 (Fig. 9).

Two important biological reference points are typically obtained from this approach:  $F_{max}$  and  $F_{0.1}$ .  $F_{max}$  represents the level of fishing mortality which maximizes yield per recruit, while the latter represents the level of fishing mortality where

the slope of the increasing yield-per recruit curve is 10% of the slope at the origin (Sissenwine and Shepherd, 1987).  $F_{0.1}$  was developed because it is more conservative (precautionary) than the former, so as to protect against possible recruitment overfishing. Estimates of  $F_{max}$  were not obtained for the gulf menhaden data because yield per recruit continues to rise with increasing  $F$  ( $>4.0 \text{ yr}^{-1}$ ). Estimate of  $F_{0.1}$  ranged between 1.4 and 2.5, increasing with increasing  $M$  (Table 5).

Annual (fishing year) estimates of yield per recruit ( $M=1.1$ ) since 1976 ranged between 9 and 31 g with values generally lower since 1980 (Fig. 9). Yield per recruit declined from an average of 26 g in the late 1970s to 13 g during the 1980s and 1990s. A value of 13 g was estimated for the 1997 fishing year.

**Spawning Potential Ratio.** Gabriel et al. (1989) refer to the percent maximum spawning potential (%MSP) as the ratio of spawning stock biomass per recruit with and without fishing mortality. This is equivalent to static SPR (Gulf of Mexico SPR Management Strategy Committee, 1996). Hence, the equilibrium spawning stock for an estimated level of fishing mortality is compared to a maximum potential spawning stock for which no fishing had occurred (ignoring adjustments to population parameters through compensatory mechanisms).

Static SPR was calculated in two ways. The first method,

~~described by Gabriel et al. (1989)~~, accumulates mature female spawning stock biomass per recruit across all ages within a fishing year. The second method, described by Prager et al. (1987), ~~accumulates the corresponding number of eggs produced by~~ the mature female biomass, using the fecundity relationship for gulf menhaden of Lewis and Roithmayr (1981). A maturation schedule of 0% for ages 0 and 1 and 100% for ages 2 and older was used for gulf menhaden (Nelson and Ahrenholz, 1986).

Spawning stock biomass is calculated annually from the number of adults (ages 2 through 4 on 1 January) times the weight at age calculated from the weight-length (Table 3) and length-age (Table 4) relationships and divided by 2 (assuming a 1:1 sex ratio).

Potential egg production was also estimated as an index of spawners. Estimates of egg production as a function of fish length were obtained from the equation (Lewis and Roithmayr, 1981):

$$\ln (\text{EGGS}) = -9.872 + 3.877 \ln L, \quad (4)$$

where EGGS equals total numbers of eggs produced per female, L equals estimated fork length (mm),  $n = 70$ ,  $s_{y.x} = 0.375$  (root mean squared error), and  $r^2 = 0.65$ . Expected egg production per female of a given age was calculated using Eq. (4) and lengths

from Table 4, with retransformation correction. Assuming a 1:1 sex ratio, spawning stock as potential eggs (PE) is calculated by

$$PE = \frac{1}{2} \sum EGG S_i N_i, \quad (5)$$

where  $EGGS_i$  is egg production per female at age  $i$ , and  $N_i$  is population numbers at age  $i$  (ages 2-4 on January 1).

Values of static SPR below 20 or 30 are typically considered evidence of recruitment overfishing for many Exclusive Economic Zone species (Mace and Sissenwine, 1993). Levels of fishing mortality (with  $M = 1.1$ ) that produce 20 or 30% SPR are summarized in Table 5. Estimates of fishing mortality from additional runs of the separable VPA using lower estimates of natural mortality ( $M = 0.8, 0.9$  and  $1.0$ ) were used to estimate the same biological reference points.

Annual estimates of static SPR ranged between 20 and 50% with values generally higher since the late 1970s (Fig. 10). Static SPR (female biomass) varied among an average of 49% during the late 1970s, 48% during the 1980s, and 57% during the 1990s (Fig. 10a). A value of 59% was estimated for the 1997 fishing year. A similar pattern of static SPR was obtained based on egg production, but with lower values (Fig. 10b). These estimates of static SPR varied among a mean of 37% for the late 1970s, 38% for the 1980s, and 49% for the 1990s. A value of 51% was estimated for 1997.

**SPAWNER-RECRUIT RELATIONSHIPS**

An important question in population dynamics and in fisheries management concerns the degree of dependency between spawning stock and the number of subsequent recruits to the stock. If there is no such dependency (except in the extreme; e.g., no spawners implies no recruits), then there is little that a manager can do to control the number of recruits (and hence future stock sizes), other than to assure that there are sufficient spawners to produce subsequent recruits to the population and to preserve the quality of the habitat utilized by the pre-recruit juveniles. If there is a quantifiable relationship between spawning stock and recruits, then management can be designed to maximize the landings or some other objective based on this relationship. To investigate the relationship between spawners and recruits, the Ricker (1954) model was used [see arguments by Nelson and Ahrenholz (1986) for a dome-shaped spawner-recruit relationship].

Estimation of recruits to age 1 was described in the VPA section (Fig. 7) and spawning stock biomass indices in the SPR section. Since 1964, egg production by age-2 spawners has contributed generally greater than 80% to the total spawning egg production (Fig. 11). Note the decreasing trend in dependence on first year spawners (averaging over 90% in the 1960s to about 82%

in the 1990s based on egg production).

Spawning biomass based on mature female biomass was on average highest during the 1980s when it averaged 321,900 t, and lowest during the 1960s when it averaged 98,200 t (Fig. 12). Intermediate values were obtained during the 1970s and 1990s when spawning stock biomass averaged 251,200 t and 282,200 t, respectively. A similar pattern was obtained from the index of egg production instead of mature female biomass.

Parameters of the Ricker model were estimated by nonlinear regression (SAS Institute Inc., 1987) from the equation:

$$R = \alpha S e^{-\beta S}, \quad (6)$$

where R equals recruits to age 1, S equals spawners (female biomass or potential egg production previous year), and  $\alpha$  and  $\beta$  are parameters to be estimated.

Parameter estimates for gulf menhaden, with spawning stock biomass estimated in 1000 t and recruits to age 1 in millions, resulted in  $\alpha = 201.6$  (standard error = 39.1) and  $\beta = 0.00308$  (standard error = 0.00066). According to Ricker (1975), maximum recruitment occurs at  $\alpha/\beta e$  (or 24.1 billion recruits to age 1) and the spawning stock biomass that will produce maximal recruitment is given by  $1/\beta$  (or 324,700 t).

Although the density-dependent parameter ( $\beta$ ) is significantly different from 0, there was no improvement in mean

squared error from the nonlinear fit of the Ricker spawner-recruit model over the variance of the mean number of recruits to age 1 (thereby suggesting number of recruits is independent of spawning stock size). The mean squared errors associated with the nonlinear fit of the Ricker model using spawning stock biomass was actually lower than the corresponding variances of the mean number of recruits to age 1. As illustrated in Fig. 13, considerable variability remains due to environmental conditions or measurement error. Given the variability evident from this regression, the predictive value is of limited use (e.g., not useful for predicting future absolute population sizes). However, the density dependence parameter is significant ( $H_0: \beta > 0$ ), so that the number of future recruits does depend to some extent upon the size of the spawning stock which produced them, albeit weakly.

Survival from spawning biomass to recruitment to age 1 can be indexed for 1964-1997 by:

$$S_0 = R_1/SSB \quad (7)$$

where  $R_1$  is recruits to age 1 and SSB is spawning stock biomass for the previous year. The pattern of survival generally varies between 0.05 and 0.15 with two large peaks during 1966-1969 and 1976-1978. (Fig. 14a). Relative survival ( $S_r$ ) was calculated by dividing observed survival by predicted survival ( $S_e$ ; based on



Ricker spawner-recruit curve) and rescaling to 0 by subtracting 1 ( $S_r = 0$  at  $S_0 = S_e$ ); that is,

$$S_r = (S_0/S_e) - 1 \quad (8)$$

Estimates of relative survival suggest that better than expected survival occurred from 1966-1969, 1973, 1976-1978, 1980-1982, 1984, and most recently in 1986 (Fig. 14b). Poorer than expected survival is particularly noted in 1964-1965, 1971, 1974-1975, 1990-1991, and possibly 1994-1995. Since recruitment success greatly affects fishing success, it is not surprising that high landings were common during the 1980s when better than expected relative survival occurred and lower during the 1990s when poorer than expected relative survival occurred.

The most recent estimate of spawning stock biomass is 292,100 t (in 1997) which is 32,600 t below the estimate of spawning stock biomass from the Ricker equation which gives maximum recruitment. Mean recruitment during the 1980s (27.2 billion) exceeded the maximum predicted by the Ricker curve by 3.1 billion recruits to age 1. During that time (1980s), spawning stock biomass averaged 321,900 t (or only 2,800 t less than the "optimal" spawning stock biomass). However, because of the large unexplained error remaining from fitting the Ricker curve, the predicted value of 23.9 billion recruits from 292,100 t of spawners has a very large confidence interval (approximate

~~95% confidence interval is between 15.9 and 34.7 billion recruits~~  
to age 1).

**SURPLUS-PRODUCTION MODELS**

Surplus-production models (Schaefer, 1954; 1957; Pella, 1967; Fox, 1970; Prager, 1994) use data on removals from the stock and relative abundance through time to obtain estimates of maximum sustainable yield (MSY) and related benchmarks. In fitting production models, it is common to use the reported landings to represent removals, under the assumption that landings are a constant fraction of total removals. To index population abundance, the most commonly used measure is catch per unit effort (CPUE), under the assumption (used frequently in fisheries modeling) that CPUE is proportional to abundance.

Under the theory of production models, sustainable yield can be represented by a dome-shaped function of abundance; if stock abundance is in equilibrium, plotting observed landings against effort also gives a dome-shaped curve. Such a curve does not represent the gulf menhaden data well; this may indicate lack of equilibrium, or the data may lie along the ascending limb of such a curve (Fig. 15).

When using CPUE as an index of abundance, fishing effort rate (E) is assumed proportional to instantaneous fishing mortality rate (F). Specifically, the catchability coefficient (q) is assumed to be constant in the following equation:

$$F = qE, \quad (9)$$

where the unit of fishing effort,  $E$ , for gulf menhaden is defined as vessel-ton-weeks. As noted in Nelson and Ahrenholz (1986), unadjusted fishing effort (nominal effort) is not a reliable index of fishing mortality rate for menhaden. The difficulty in directly obtaining a reliable unit of fishing effort results from the schooling nature of clupeid fishes, which at small population sizes are relatively more susceptible to fishing effort [see discussion of "dynamic aggregation process" in Clark and Mangel (1979)]. The resulting concern is that severe stock depletion could occur before being detectable from an analysis of landings and nominal CPUE data.

To determine whether the catchability coefficient,  $q$ , for gulf menhaden is constant or dependent upon population size, it was estimated by solving Eq. (9) for  $q$  ( $= F/E$ ) for each fishing year since 1964 and compared with the population size (ages 1-4) for the same fishing year (Fig. 16;  $F$  and population size estimates were from VPAs for ages 1-4). As noted in Nelson and Ahrenholz (1986), there is a pronounced inverse relationship between the catchability coefficient and population size.

A measure of fishing effort proportional to fishing mortality rate  $F$  is referred to as *effective effort*. To adjust nominal fishing effort to account for variations in  $q$ , the 1964

value of  $q$  ( $q_a$ ) was used to adjust nominal effort ( $E$ ) so that  $E'$  is proportional to  $F$ ; i.e.,

$$E' = E q_t / q_a, \quad (10)$$

where  $E'$  is a unit of effective fishing effort and  $q_t$  is the catchability coefficient in that year, normalized to the catchability coefficient in 1964 (Fig. 17). Note that while nominal effort was increasing from 1964 through the mid-1980s, effective effort remained low. A CPUE index derived from effective effort is frequently referred to as adjusted CPUE.

Two varieties of production model were fit to data on Gulf menhaden. The computer program PRODFIT (Fox, 1975), which attempts to account for nonequilibrium conditions through a smoothing process, was used to estimate parameters (and MSY) for the Pella-Tomlinson generalized production model (Pella and Tomlinson, 1969):

$$U = (A + BE')^{1/(m-1)} \quad (11)$$

where  $U$  is catch per unit of effort, and  $A$ ,  $B$ , and  $m$  are parameters to be estimated. In using PRODFIT, reported landings and effective effort, as estimated above, were used, and two ages were assumed to contribute to the landings (Fig. 2). Parameter estimates and associated square root of the variability index

~~(Fox, 1975)~~ were estimated using landings and effective effort for 1964-1997:  $A = 2.14$  (1.26),  $B = -0.0031$  (0.0035),  $m = 1.33$  (0.90),  $MSY = 717,200$  t (32,000 t) and  $f_{MSY} = 171,400$  vtw (20,600 vtw) (Fig. 18). Although effort in 1997 was 430,200 vtw, it was only 118,000 vtw in terms of 1964 equivalent units of effort. Estimated  $f_{MSY}$  has only been exceeded once during the 1990s (in 1994), four times during the 1980s, six times during the 1970s, and exceeded in all years from 1964-1969.

The second production modeling approach was the non-equilibrium production model described by Prager (1994) and implemented in the ASPIC computer program (Prager, 1995). The models described were fit to the observed landings data and the effective CPUE data derived in Eq. (10), above.

The model used (Prager, 1994) is an extension of the logistic Schaefer (1954; 1957) model and uses a fitting procedure similar to that developed by Pella (1967) and later used by Pella and Tomlinson (1969) in their GENPROD computer program. The model makes no equilibrium assumption, but rather represents the population as a dynamic quantity of biomass subject to removals (fishing) and net biological production (the surplus of growth and recruitment over natural mortality). In fitting, an observation-error estimator is used, conditioned on yield and assuming lognormal error in the adjusted CPUE index, which is mathematically equivalent to assuming lognormal error in  $E'$ .

The ASPIC run for gulf menhaden, which used the estimated

effective-effort series for 1964-97, estimated MSY = 752,700 t and  $f_{MSY} = 196,900$  vtw (and  $f_{0.1} = 177,200$  vtw).  $R^2$  for this model was 0.542. A plot of annual fishing mortality rate relative to that fishing mortality rate producing MSY is shown in Fig. 19a; while a plot of population biomass relative to that population biomass producing MSY is shown in Fig. 19b. If relative biomass ( $B/B_{MSY}$ ) is below 1, the stock is depressed (whether from natural phenomena or overfishing) and cannot provide MSY; if the relative F ( $F/F_{MSY}$ ) is above 1, the rate of fishing mortality is above that which can provide MSY, and if continued through time will result in a stock size below  $B_{MSY}$ . In the 1960s and late 1980s, relative F was significantly above 1, while relative biomass was significantly below 1 only in the 1960s. In recent years, relative F was significantly below 1, while relative biomass was significantly above 1.

Both methods of surplus production modeling agree as to when the stock was in good condition and the fishing rates were in acceptable ranges. Also, both estimated MSY and  $F_{MSY}$  are at about the same levels.

## JUVENILE ABUNDANCE INDICES AND ENVIRONMENTAL FACTORS

Attempts have been made to relate estimates of juvenile abundance to subsequent year class strength of menhaden. For example, Ahrenholz et al. (1989) were unable to relate gulf menhaden juvenile abundance from a gulf-wide surface-trawl survey conducted by the NMFS Beaufort Laboratory to VPA estimates of recruits to age 1 during 1971-1978. However, for this assessment two juvenile gulf menhaden data sets were investigated as potential indices of year class strength (i.e, recruitment): trawl data from Louisiana and bag seine data from Texas. In addition, several environmental factors were investigated that may contribute to recruitment success; these included Mississippi River flow, indices of El Nino (e.g., NINO 3.4 Anomaly), North Atlantic sea surface temperature (SST), and North Atlantic Oscillation (NAO). These juvenile indices and environmental variables are compared to VPA estimated recruitment to age 0 (approximately 6 months of age). Recruits to age 0 for a given year are equal to recruits to age 1 for the following year times  $e^{0.55}$ . Estimates for recruits to age 1 are from the VPA using the catch matrix with ages 1-4 and years 1976-1997 (providing estimates of age 0 recruits for 1975-1996). All time series in this section are normalized by subtracting the series mean and dividing by the series standard deviation, prior to any



statistical comparison.

**Louisiana Trawl Juvenile Abundance Index.** Juvenile abundance data for gulf menhaden were obtained from otter trawl samples collected by Louisiana Department of Wildlife and Fisheries (LDWF) from 1966 through 1997. As described in Guillory (1993): "Samples were taken weekly or biweekly throughout the year at selected stations across the coast. The otter trawl measured 4.9 meters (m) in length with 19.1 mm bar mesh wings and 6.4 mm bar mesh tail. Samples consisted of ten-minute tows at speeds of approximately three knots."

Sampling locations, or Coastal Study Areas (CSA), from east to west are as follows: 1. Lake Borgne/Ponchartrain, 2. Breton Sound, 3. Barataria Bay, 4. Timbalier/Terrebonne Bay, 5. Caillou Lake/Lake Mechant, 6. Vermilion Bay, and 7. Calcasieu Lake. Coastal areas 1-4 (deleting CSA 3 - Barataria Bay) and 5-7 were combined into two groups, respectively. Based on availability of young menhaden, we used data from March through August.

Three types of juvenile abundance indices were computed by two area groups and coastwide for gulf menhaden: presence/absence, catch per effort (CPE), and retransformed General Linear Model (GLM). The GLM was based on  $\ln(\text{count}+1)$  as the dependent variable with year, season (nested in year), area, and station (nested in area) as class variables. This model was run

outputting LSMEANS by year as index of juvenile abundance.

Coastwide estimates of the three index types are compared to the estimate of recruits to age 0 (six months of age) (Fig. 20a).

Correlations between the two Louisiana area groups using the three indices from each area group were mostly non-significant ( $P < 0.057$  for group 1 CPE vs group 2 retransformed GLM). Both groups were correlated with the coastwide indices. The CPE index from area group 2 (western CSAs) and coastwide showed strong correlation with recruits to age 0 ( $r = 0.65$  and  $0.56$ , respectively, both significantly different from 0).

**Texas Bag Seine Juvenile Abundance Index.** Juvenile abundance data for gulf menhaden were obtained from bag seine samples collected by Texas Parks & Wildlife Department in nine coastal bays from 1978 through 1997. Bag seines are "18.3 m long, 1.8 m deep with 1.3-cm stretched nylon multifilament mesh in the 1.8 m wide central bag with remaining webbing 1.9-cm stretched mesh" (Dailey et al., 1991). Details on sampling frequency and procedures for bag seines are given in Dailey et al. (1991; p. 2). Each sample covered about 0.03 h per tow of surface area. Additional environmental information was collected prior to each bag seine sample (water temperature, surface salinity, dissolved oxygen, and turbidity).

The major sampling areas from east to west are as follows:

1. Sabine Lake, 2. Galveston Bay, 3. East Matagorda Bay, 4. Matagorda Bay, 5. San Antonio Bay, 6. Aransas Bay, 7. Corpus Christi Bay, 8. Upper Laguna Madre Bay, and 9. Lower Laguna Madre Bay. The analyses that follow emphasize the four eastern most areas for March through September, with sampling commencing in East Matagorda Bay with February 1983 and in Sabine Lake with January 1986.

As with the Louisiana trawl data, three types of juvenile abundance indices were computed by area and for the northern group for gulf menhaden: presence/absence, CPE, and retransformed GLM. The GLM was based on  $\ln(\text{count}+1)$  as the dependent variable with year, season (nested in year), area, and station (nested in area) as class variables. This model was run outputting LSMEANS by year as index of juvenile abundance. Coastwide estimates of the three index types are compared to the estimate of recruits to age 0 (six months of age) (Fig. 20b).

Some significant correlations among the western Louisiana area group and the eastern Texas group using the three indices from each area group showed greatest significance with the western Louisiana group ( $P < 0.045$  for P/A and  $P < 0.010$  for CPE). The P/A and retransformed GLM indices for the eastern Texas group showed strongest correlation with recruits to age 0 ( $r = 0.57$  and  $0.52$ , respectively, both significantly different from 0).

**Environmental Relationships.** Several environmental variables are

~~briefly investigated in this section as they may relate to~~  
recruitment success or failure of gulf menhaden. Changes in weather patterns and introduction of pollutants can have significant effects on the survival of gulf menhaden. Patterns in survival to recruitment have been investigated relative to spawning stock earlier in this report. Govoni (1997) has demonstrated an inverse relationship between changes in Mississippi River flow with changes in gulf menhaden recruitment to age 0. We have updated the data used by Govoni through 1997. We continue to note a significant inverse relationship ( $r = -0.46$ ,  $P < 0.008$ ) between 1-yr change in river flow with 1-yr change in recruitment success (Fig. 21). That is, if river flow declines from one year to the next then recruits to age 0 are likely to increase (and vice versa).

Because river flow is greatly affected by weather patterns such as El Nino (i.e., NINO 3.4 anomaly), North Atlantic sea surface temperature (SST), and the North Atlantic Oscillation (NAO), intercorrelations among these variables and gulf menhaden recruits to age 0 were investigated. El Nino refers to a warming pattern in the eastern equatorial Pacific (Cane, 1983). SST index values and anomalies (i.e., NINO 3.4 from NOAA Climate Prediction Center (NCEP) web site - <http://nic.fb4.noaa.gov/data/cddb/>) were available monthly from 1950-1997. An index of North Atlantic SST (5-20 N, 60-30 W) was available monthly for 1950-1997 from this same web site. The NAO

index, refers to sea-level pressure changes based on the normalized pressures between Lisbon, Portugal, and Stykkisholmur, Iceland, were obtained from Hurrell (National Center for Atmospheric Research, Boulder, CO). Winter indices (December-March) based on the NAO have been related to long-term variations in climate (Hurrell, 1995; 1996; Hurrell and van Loon, 1997). Normalized indices were correlated among themselves and with normalized gulf menhaden recruits to age 0.

Mississippi River flow correlated well with the North Atlantic SST and NAO ( $P < 0.006$  and  $P < 0.020$ , respectively), but not with NINO 3.4 anomaly ( $P < 0.90$ ). NINO 3.4 anomaly correlated weakly with North Atlantic SST ( $P < 0.09$ ), and North Atlantic SST correlated well with NAO ( $P < 0.005$ ). But none of these indices showed any significant correlation with gulf menhaden recruits to age 0. One-year differences (lagged) in these indices showed significant correlations among Mississippi River flow, North Atlantic SST and NAO, with only differences in river flow correlating with differences in recruits to age 0 as noted above ( $P < 0.008$ ).

**MANAGEMENT IMPLICATIONS**

The gulf menhaden fishery is conducted within the territorial sea and offshore of five coastal states (Florida to Texas). All states, except Florida, enacted the cooperative management plan under the Gulf States Marine Fisheries Commission (GSMFC) in 1977 (Christmas and Etzold, 1977). The plan was revised in 1983, 1988, and 1995 (Christmas et al., 1983; 1988; Leard et al., 1995), and will be revised again during 1999. Because management authority is vested in the individual states, some regulations are area-specific on a state or county basis, but other regulations, such as length of fishing season (mid-April through November 1), are common to all states, except Florida. The extension of the fishing season through November 1 (previously mid-October) was adopted by the GSMFC at their March 1993 annual meeting. No state controls or limits the catch or fishing effort of vessels.

Landings and nominal effort were quite high during the 1980s, but have declined precipitously during the late 1980s and early 1990s. Landings peaked in 1984 with 982,800 t, while nominal fishing effort peaked in 1983 with 655,800 vessel-ton-weeks. Most recently (1997), landings were 611,200 t with 430,200 vessel-ton-weeks. Landings between 1982 and 1987 were very high, exceeding estimates of long-term MSY, but were

supported by generally high recruitment to age 1. More recent landings (421,400 to 761,600 t) are comparable to, or somewhat below, recent estimates of MSY (717,000 to 753,000 t based on the PRODFIT and ASPIC estimates of surplus production). Vaughan (1987) noted an upward trend in historical estimates of MSY, which was no longer maintained in this or the previous assessment.

Relative survival index suggests that recent estimates of recruits to age 1 are below what would be expected based on the Ricker spawner-recruit relationship between spawning stock biomass and recruits to age 1. This relatively poor survival should be viewed in the context that while spawning stock biomass was been generally rising from 1989 to 1997 (161,000 t to 292,100 t), recruits to age 1 have fluctuated without apparent trend (13 to 23 billion during the 1990s).

Recent estimates of fishing mortality (for  $M = 1.1$ ) compare favorably with the different estimates of biological reference points. Recent estimates of  $F$  (ages 1-4) are below  $F_{0.1}$  for the range of natural mortality ( $M$ ) considered in this assessment. For the preferred natural mortality value of 1.1, mean of the estimates of  $F$  (ages 1-4) is 0.6. This value compares favorably with  $F_{0.1}$  of 2.5,  $F_{20}$  between 1.9 and 2.4, and  $F_{30}$  between 1.2 and 1.6. When lower estimates of natural mortality ( $M$ ) are assumed, then the estimated biological reference points decrease while estimates of fishing mortality increase. For  $M$  of 0.8, recent

estimates of  $F$  (mean of 0.8 for 1990-1997) are below estimates of  $F_{0.1}$  (1.4),  $F_{20}$  (1.3-1.9) and  $F_{30}$  (0.8-1.2). Only the biological reference point for  $F_{30}$  based on egg production is about equal to the mean  $F$  for the 1990s. We still consider  $M$  equal to 1.1, based on tagging, as the best point estimate.

Recent estimates of relative  $F$  ( $F/F_{msy}$ ) and relative biomass ( $B/B_{msy}$ ) from the ASPIC fits to the Schaefer surplus production models suggest that recent fishing mortality is low and biomass is high relative to  $F_{msy}$  and  $B_{msy}$ , respectively.

Our original intent had been to use juvenile abundance indices obtained from Louisiana and Texas to calibrate the gulf menhaden VPA. Unfortunately, unstable results were obtained from FADAPT (Restrepo, 1996), while the limited number of ages precluded use of XSA (Darby and Flatman, 1994) or ICA (Patterson and Melvin, 1995). Further exploration of calibration approaches is needed.

In summary, gulf menhaden have higher natural mortality and are shorter lived than Atlantic menhaden, and as a result there are rapid annual changes in the gulf menhaden fishable stock. The gulf menhaden fishery is currently fully exploited and the population appears reasonably stable in view of the age composition, life span, and effects of environmental factors. Annual production, fishing effort, and fleet size appear reasonably balanced and risk of overfishing low with 1997-1998 fleet size and recent mean recruitment. Given the variability in



the data and model estimates, recent landings below long-term MSY (and well below high landings of the mid-1980s) suggest that the stock appears reasonably stable.

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**Table 1.** Number of gulf menhaden (*Brevoortia patronus*) reduction plants by port and total, number of purse-seine vessels, and number of fish sampled for age and size for fishing years, 1964-1997.

Fishing year	Ports								No. reduction plants	No. reduction vessels	No. fish sampled
	A	MP	E	D	MC	IC	C	SP			
1964	0	3	2	2	1	0	2	1	11	78	12,457
1965	0	3	2	3	1	1	2	1	13	87	15,819
1966	1	3	2	2	1	1	3	1	13	92	13,016
1967	0	3	2	2	1	1	3	1	13	85	14,519
1968	1	3	2	2	1	1	3	1	14	78	16,499
1969	1	3	2	1	1	1	3	1	13	75	15,281
1970	0	3	2	2	1	1	3	1	13	76	10,560
1971	0	3	2	2	1	1	3	1	13	85	7,859
1972	0	3	2	1	1	1	3	0	11	75	10,030
1973	0	2	2	1	1	1	3	0	10	66	8,958
1974	0	2	2	1	1	1	3	0	10	71	10,120
1975	0	3	2	1	1	1	3	0	11	78	9,529
1976	0	3	2	1	1	1	3	0	11	82	13,586
1977	0	3	2	1	1	1	3	0	11	80	14,918
1978	0	3	2	1	1	1	3	0	11	80	12,985
1979	0	3	2	1	1	1	3	0	11	78	11,620
1980	0	3	2	1	1	1	3	0	11	79	9,961
1981	0	3	2	1	1	1	3	0	11	80	10,408
1982	0	3	2	1	1	1	3	0	11	82	10,709
1983	0	3	2	1	1	1	3	0	11	81	14,840
1984	0	3	2	1	1	1	3	0	11	81	16,001
1985	0	2	1	1	0	1	2	0	7	73	13,240
1986	0	2	2	1	0	1	2	0	8	72	16,530
1987	0	2	2	1	0	1	2	0	8	75	16,530
1988	0	2	2	1	0	1	2	0	8	73	12,410
1989	0	2	2	1	1	1	2	0	9	77	13,970
1990	0	2	2	1	1	1	2	0	9	75	11,670
1991	0	1	2	1	1	1	1	0	7	58	11,690
1992	0	1	1	1	1	1	1	0	6	51	15,590
1993	0	1	1	1	1	1	1	0	6	52	15,730
1994	0	1	1	1	1	1	1	0	6	55	16,820
1995	0	1	1	1	1	1	1	0	6	52	14,520
1996	0	1	1	0	1	1	1	0	5	51	13,550
1997	0	1	1	0	1	1	1	0	5	52	10,950

**Notes for Table 1:**

- A = Appalachicola, FL: Fish Meal Co. (1966, 1968-69).
- MP = Moss Point, MS: Seacoast Products Co. (1964-72, 1975-84), AMPRO Fisheries, Inc. (formerly Standard Products (1964-90), Zapata Haynie, Inc. (1964-92).
- E = Empire, LA: Empire Menhaden Co. (1964-91), Daybrook Fisheries (formerly Petrou Fisheries, Inc. (1964-92).
- D = Dulac, LA: Dulac Menhaden Fisheries (1964-68, 1970-71), Fish Meal and Oil Co. (1964-65), Zapata Haynie, Inc. (1965-92).
- MC = Morgan City, LA: Seacoast Products Co. (1965-84), Gulf Protein (1989-92).
- IC = Intracoastal City, LA: Seacoast Products Co. (1965-84), Zapata Haynie, Inc. (1985-92).
- C = Cameron, LA: Louisiana Menhaden Co. (1964-90), Seacoast Products Co. (1964-84), Zapata Haynie, Inc. (1967-92).
- SP = Sabine Pass, TX: Texas Menhaden Co. (1964-71).

**Table 2.** Estimated landings of gulf menhaden (*Brevoortia patronus*) in numbers at age (0-4+), total numbers landed (ages 0-4+), total landings by weight and nominal fishing effort (vessel-ton weeks) for the fishing years, 1964-97. New method of estimation of catch at age used for 1985-1997.

Fishing year	Landings in nos. at age (10 <sup>3</sup> )					Total	Total landings (1000 t)	Nominal fishing effort <sup>a</sup>
	0	1	2	3	4+			
1964	0.0	3.33	1.50	0.12	0.0	4.95	409.4	272.9
1965	0.04	5.03	1.08	0.08	0.0	6.23	463.1	335.6
1966	0.03	3.31	0.87	0.03	0.0	4.24	359.1	381.3
1967	0.02	4.27	0.34	0.01	0.0	4.64	317.3	404.7
1968	0.07	3.48	1.00	0.04	0.0	4.58	373.5	382.3
1969	0.02	6.08	1.29	0.03	0.0	7.41	523.7	411.0
1970	0.05	3.28	2.28	0.04	0.0	5.65	548.1	400.0
1971	0.02	5.76	1.96	0.18	0.0	7.92	728.2	472.9
1972	0.02	3.05	1.73	0.09	0.0	4.89	501.7	447.5
1973	0.05	3.03	1.11	0.10	0.0	4.29	486.1	426.2
1974	0.0	3.85	1.47	0.06	0.0	5.38	587.4	485.5
1975	0.11	2.44	1.50	0.46	0.0	4.51	542.6	538.0
1976	0.0	4.59	1.37	0.20	0.0	6.17	561.2	575.8
1977	0.0	4.66	1.33	0.11	0.01	6.11	447.1	532.7
1978	0.0	6.79	2.74	0.05	0.01	9.59	820.0	574.3
1979	0.0	4.70	2.88	0.34	0.01	7.92	777.9	533.9
1980	0.07	3.41	3.26	0.44	0.05	7.22	701.3	627.6
1981	0.0	5.75	1.42	0.33	0.03	7.54	552.6	623.0
1982	0.0	5.15	3.30	0.50	0.06	9.01	853.9	653.8
1983	0.0	4.69	3.81	0.38	0.03	8.90	923.5	655.8
1984	0.0	7.75	2.88	0.44	0.05	11.12	982.8	645.9
1985	0.0	8.68	2.50	0.23	0.04	11.45	881.1	560.6
1986	0.0	4.28	4.89	0.17	0.03	9.37	822.1	606.5
1987	0.0	6.70	3.98	0.43	0.01	11.12	894.2	604.2
1988	0.0	5.34	2.58	0.15	0.02	8.09	623.7	594.1
1989	0.0	5.55	1.62	0.07	0.00	7.24	569.6	555.3
1990	0.0	3.89	1.79	0.14	0.01	5.83	528.3	563.1
1991	0.0	2.22	2.34	0.22	0.03	4.80	544.3	472.3
1992	0.0	2.19	1.51	0.20	0.03	3.92	421.4	408.0
1993	0.0	3.49	1.53	0.19	0.02	5.24	539.2	455.2
1994	0.0	3.63	3.20	0.44	0.05	7.32	761.6	472.0
1995	0.0	1.37	2.42	0.10	0.00	3.90	463.9	417.0
1996	0.0	1.78	2.51	0.25	0.02	4.57	479.4	451.7
1997	0.0	3.24	2.40	0.28	0.04	5.95	611.2	430.2

<sup>a</sup> Units are 1000 vessel-ton weeks.

Table 3. Weight-length regression parameters (and standard errors) for gulf menhaden (*Brevoortia patronus*) by fishing year, 1964-97 ( $\ln W = \ln a + b \ln L$ ). Sample size (n) and mean squared error (MSE) also given.

Fishing year	n	$\ln a$	b	$r^2$	MSE
1964	12,377	-12.7 (0.04)	3.4 (0.007)	0.94	0.009
1965	15,673	-12.5 (0.03)	3.3 (0.005)	0.96	0.009
1966	12,681	-11.6 (0.03)	3.2 (0.006)	0.95	0.007
1967	14,401	-11.3 (0.03)	3.1 (0.006)	0.94	0.008
1968	15,829	-11.7 (0.03)	3.2 (0.006)	0.95	0.008
1969	15,044	-11.4 (0.03)	3.1 (0.006)	0.95	0.009
1970	10,531	-12.0 (0.04)	3.2 (0.008)	0.95	0.006
1971	7,848	-12.2 (0.04)	3.3 (0.009)	0.95	0.008
1972	9,975	-11.8 (0.04)	3.2 (0.008)	0.94	0.008
1973	8,954	-11.7 (0.05)	3.2 (0.009)	0.94	0.008
1974	10,085	-10.8 (0.04)	3.0 (0.009)	0.92	0.010
1975	9,528	-11.6 (0.03)	3.1 (0.007)	0.96	0.008
1976	13,532	-10.8 (0.03)	3.0 (0.006)	0.95	0.008
1977	14,910	-11.4 (0.02)	3.1 (0.005)	0.97	0.006
1978	12,983	-12.1 (0.03)	3.2 (0.006)	0.96	0.006
1979	11,618	-12.2 (0.03)	3.3 (0.005)	0.97	0.005
1980	9,948	-13.0 (0.05)	3.4 (0.010)	0.92	0.023
1981	10,405	-11.7 (0.03)	3.2 (0.006)	0.96	0.010
1982	10,678	-12.7 (0.04)	3.4 (0.007)	0.95	0.011
1983	14,837	-12.3 (0.03)	3.3 (0.005)	0.96	0.008
1984	15,955	-11.9 (0.03)	3.2 (0.005)	0.96	0.007
1985	13,227	-11.5 (0.03)	3.1 (0.006)	0.95	0.007
1986	16,495	-11.8 (0.02)	3.2 (0.005)	0.97	0.006
1987	16,458	-11.7 (0.03)	3.2 (0.005)	0.96	0.006
1988	12,403	-11.4 (0.04)	3.1 (0.008)	0.93	0.011
1989	13,951	-11.8 (0.03)	3.2 (0.007)	0.95	0.007
1990	11,500	-11.7 (0.04)	3.2 (0.007)	0.95	0.012
1991	11,637	-12.2 (0.04)	3.3 (0.009)	0.93	0.008
1992	15,231	-10.4 (0.03)	2.9 (0.006)	0.94	0.009
1993	15,348	-11.3 (0.04)	3.1 (0.007)	0.93	0.012
1994	16,785	-11.0 (0.03)	3.0 (0.006)	0.95	0.007
1995	14,275	-12.0 (0.04)	3.2 (0.007)	0.94	0.008
1996	12,784	-12.6 (0.05)	3.3 (0.010)	0.90	0.017
1997	10,583	-11.7 (0.03)	3.2 (0.006)	0.96	0.005

Table 4. Estimated von Bertalanffy growth parameters (and asymptotic standard errors) for gulf menhaden (*Brevoortia patronus*) for fishing years, 1964-97.

Year	n	$L_{\infty}$	K	$t_0$
1964	12,261	242.7 (0.81)	0.39 (0.005)	-0.97 (0.017)
1965	15,185	400.8 (7.18)	0.13 (0.004)	-1.81 (0.032)
1966	12,429	278.1 (1.44)	0.29 (0.004)	-1.14 (0.018)
1967	14,065	235.0 (0.80)	0.53 (0.005)	-0.50 (0.009)
1968	15,271	281.0 (1.24)	0.32 (0.004)	-0.79 (0.014)
1969	14,764	473.5 (19.6)	0.10 (0.007)	-2.15 (0.049)
1970	10,402	233.4 (0.97)	0.51 (0.008)	-0.55 (0.014)
1971	7,654	246.2 (0.88)	0.41 (0.006)	-0.85 (0.017)
1972	9,886	223.7 (0.41)	0.65 (0.006)	-0.34 (0.009)
1973	8,953	283.7 (1.93)	0.30 (0.006)	-1.19 (0.026)
1974	10,086	226.0 (0.36)	0.82 (0.006)	+0.02 (0.005)
1975	9,527	745.0 (37.9)	0.06 (0.004)	-2.28 (0.043)
1976	13,389	411.4 (19.7)	0.15 (0.013)	-1.63 (0.093)
1977	14,897	389.2 (7.28)	0.15 (0.006)	-1.52 (0.046)
1978	12,944	397.6 (12.2)	0.12 (0.007)	-2.34 (0.084)
1979	11,121	231.3 (0.48)	0.51 (0.008)	-0.61 (0.028)
1980	9,883	232.1 (0.45)	0.61 (0.006)	-0.04 (0.009)
1981	10,273	241.0 (0.67)	0.41 (0.007)	-0.67 (0.032)
1982	10,341	263.3 (0.99)	0.29 (0.005)	-1.29 (0.037)
1983	14,523	245.9 (0.75)	0.40 (0.006)	-0.85 (0.031)
1984	15,936	241.9 (0.52)	0.44 (0.005)	-0.54 (0.021)
1985	13,225	233.7 (0.65)	0.51 (0.008)	-0.37 (0.022)
1986	16,494	227.7 (0.43)	0.54 (0.006)	-0.18 (0.018)
1987	16,458	262.9 (2.23)	0.27 (0.007)	-1.47 (0.049)
1988	12,402	224.0 (0.78)	0.51 (0.010)	-0.41 (0.029)
1989	13,950	241.1 (1.17)	0.37 (0.008)	-0.94 (0.035)
1990	11,456	234.4 (0.43)	0.44 (0.006)	-0.67 (0.026)
1991	11,378	234.4 (0.73)	0.42 (0.008)	-1.06 (0.043)
1992	14,214	235.0 (0.43)	0.44 (0.006)	-0.87 (0.029)
1993	14,578	246.8 (0.53)	0.34 (0.003)	-1.36 (0.017)
1994	16,062	235.6 (0.44)	0.48 (0.006)	-0.61 (0.022)
1995	13,489	237.6 (0.64)	0.42 (0.007)	-0.94 (0.032)
1996	11,883	215.6 (0.23)	0.84 (0.012)	-0.16 (0.020)
1997	9,879	225.9 (0.40)	0.56 (0.008)	-0.43 (0.025)

**Table 5.** Biological reference points from yield-per-recruit (Y/R) and spawning potential ratio (static SPR) analyses based on different virtual population analyses ( $M = 0.8, 0.9, 1.0, \text{ and } 1.1$ ) for gulf menhaden (*Brevoortia patronus*). The mean fishing mortality rate (ages 1-4) for the 1990s and 1997 are given for comparison.

Biological Reference Point	Natural Mortality, $M$			
	0.8	0.9	1.0	1.1
Mean $F$ for 1990s	0.83	0.77	0.69	0.63
Mean $F$ for 1997	0.77	0.70	0.63	0.57
Y/R: $F_{0.1}$	1.4	1.8	2.1	2.5
Static SPR (Biomass):				
$F_{20}$	1.9	2.1	2.3	2.4
$F_{30}$	1.2	1.4	1.5	1.6
Static SPR (Eggs):				
$F_{20}$	1.3	1.5	1.7	1.9
$F_{30}$	0.8	0.9	1.0	1.2



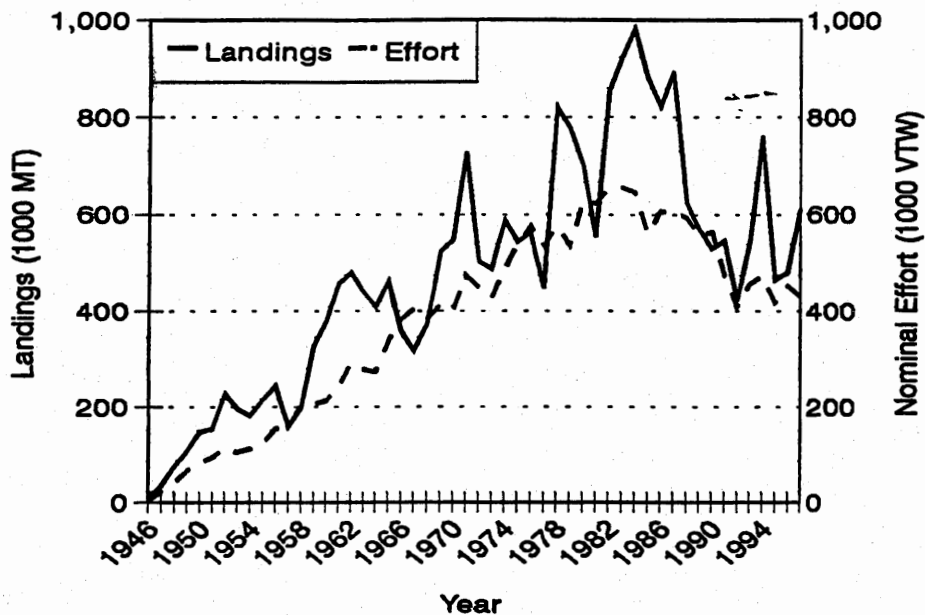


Figure 1. Landings and nominal fishing effort by the gulf menhaden (*Brevoortia patronus*) reduction fishery, 1946-1997.

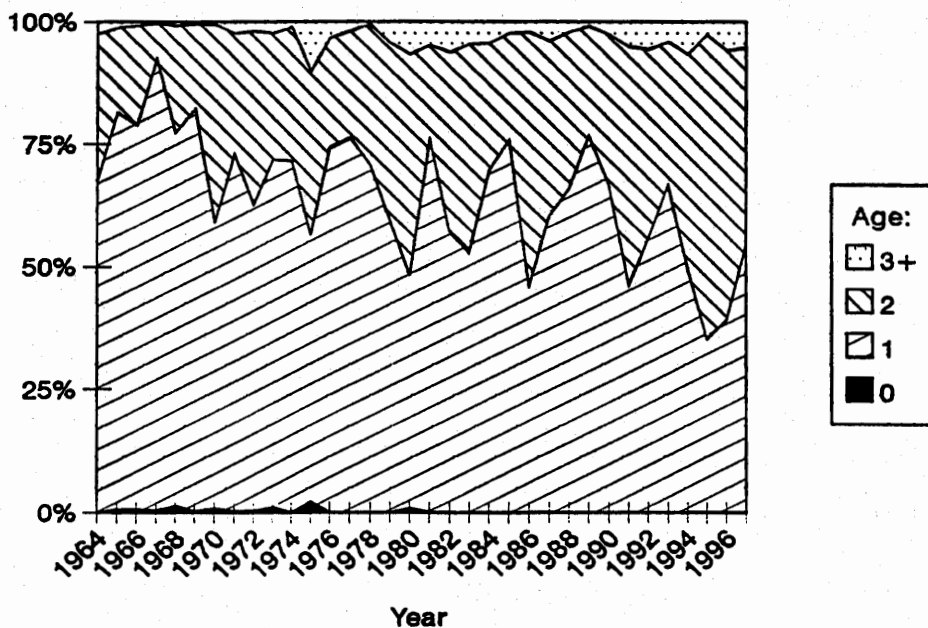


Figure 2. Percent of numbers for ages 1-4+ estimated from landings by the gulf menhaden (*Brevoortia patronus*) reduction fishery, 1964-1997.

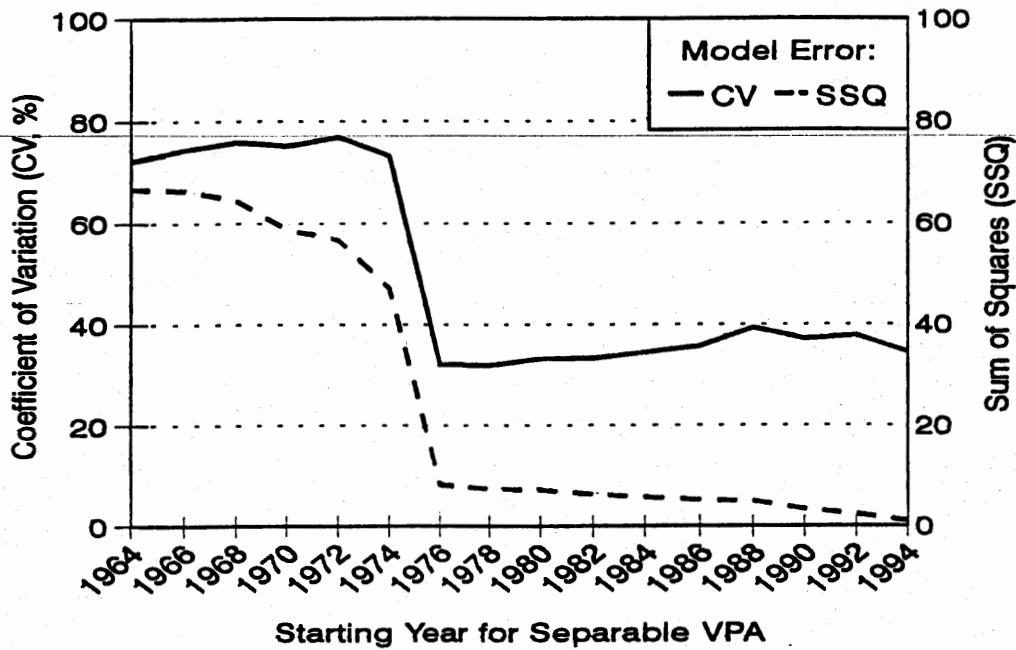


Figure 3. Coefficient of variation (CV) of catch data and sum of squared (SSQ) deviations of log catch ratios plotted against increasing starting year of the gulf menhaden (*Brevoortia patronus*) catch matrix used in the separable VPA approach. Starting year varies between 1964 and 1994 and final year in the catch matrix for all computations is 1997.

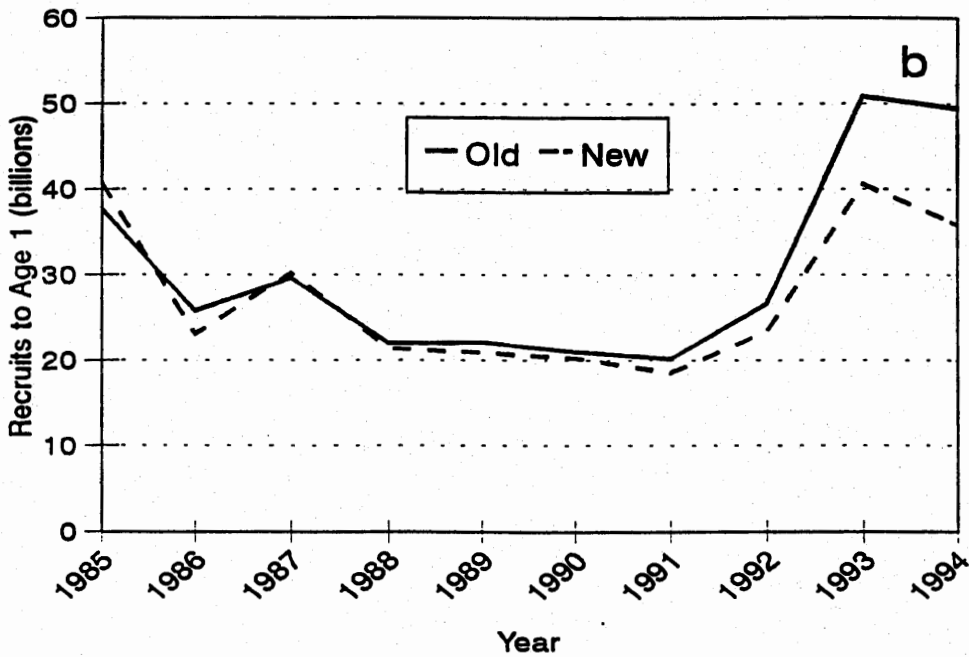
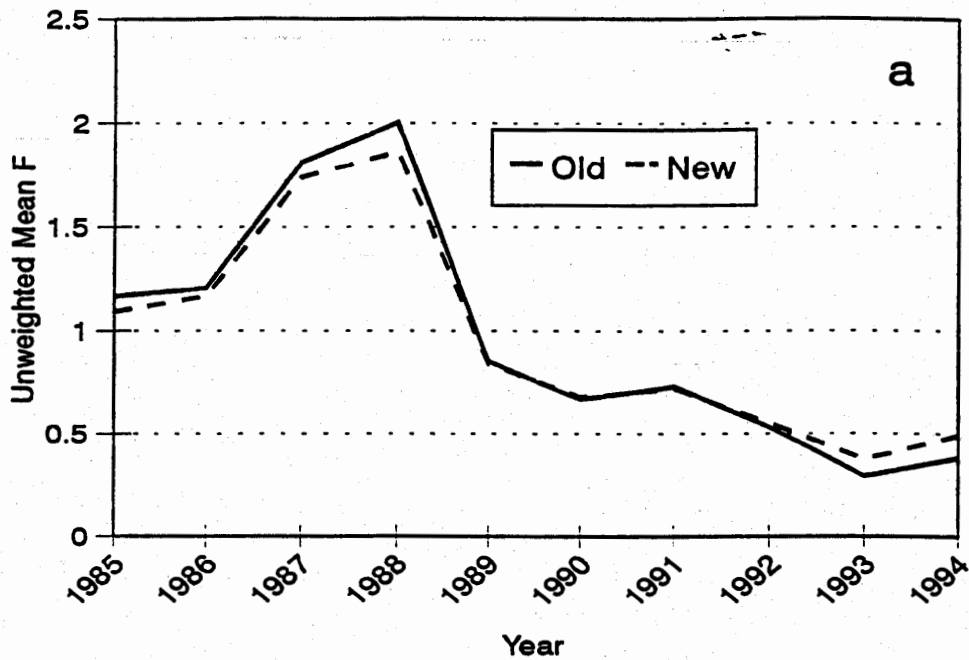


Figure 4. Comparison of a) unweighted mean F and b) recruits to age 1 estimated using separable virtual population analysis on old and new methods for estimating catch at age of gulf menhaden (*Brevoortia patronus*) applied to overlapping years, 1985-1996.

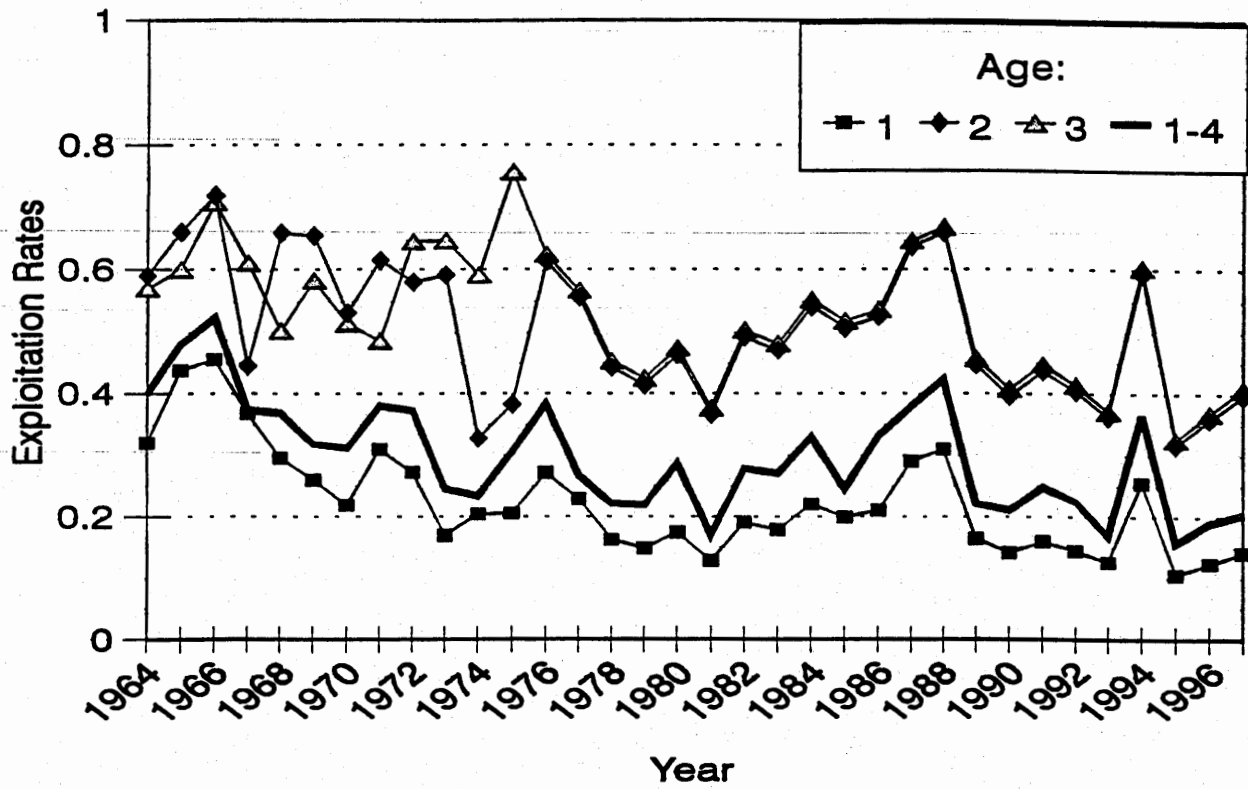


Figure 5. Gulf menhaden (*Brevoortia patronus*) exploitation rates ( $u$ ) for ages 1, 2, 3, and ages 1-4 combined obtained from separable VPA approach ( $M = 1.1$ ), 1964-1997.

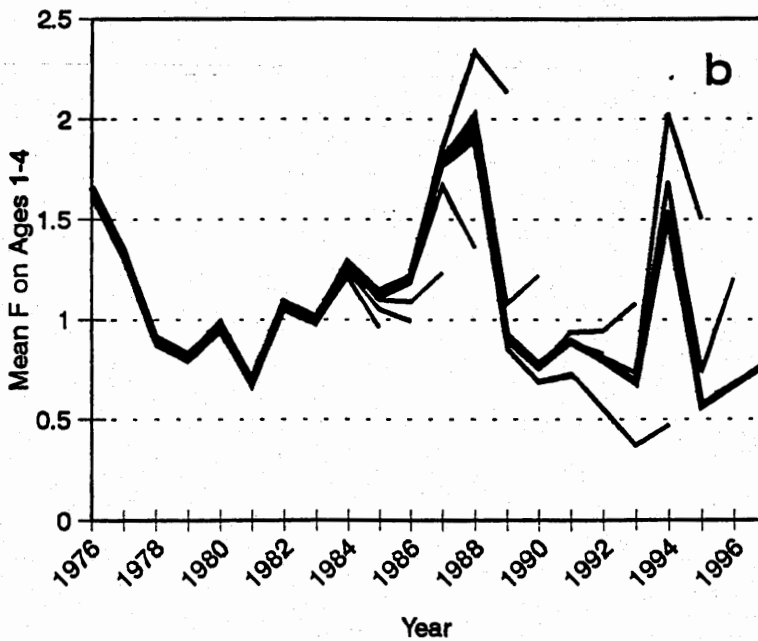
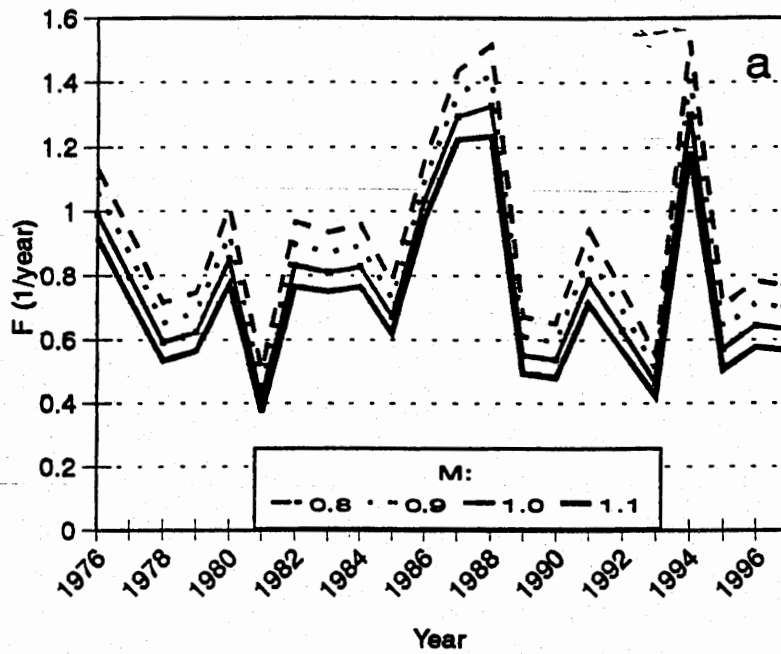


Figure 6. Mean fishing mortality (F) over ages 1-4 for gulf menhaden (*Brevoortia patronus*) from separable VPA compared by a) natural mortality (0.8, 0.9, 1.0, and 1.1 yr<sup>-1</sup>), 1976-1997, and b) retrospective comparison with decreasing maximum year in catch matrix (M=1.1).

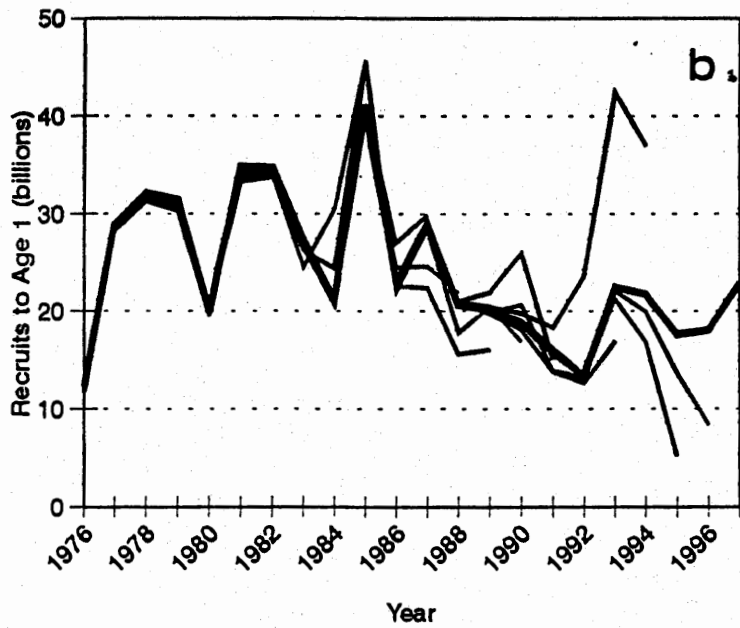
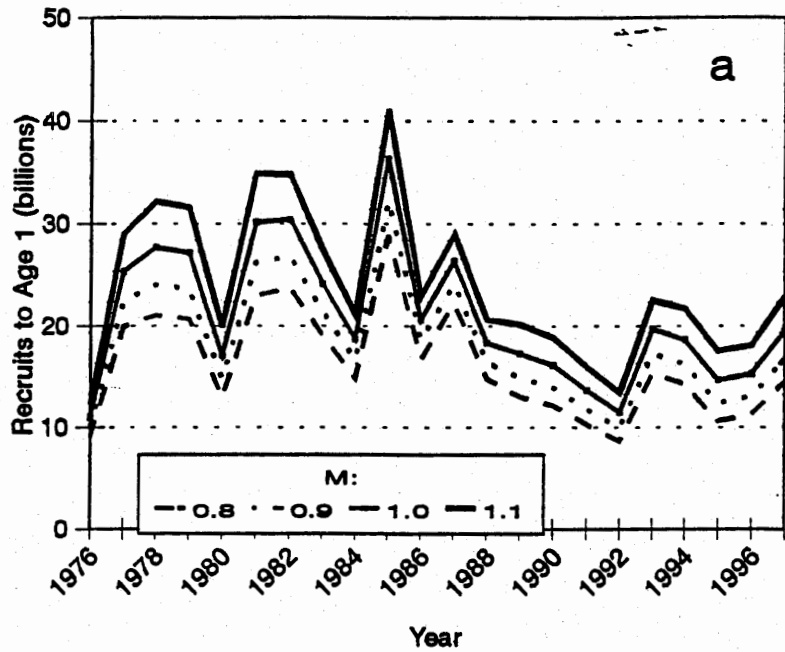


Figure 7. Recruits to age-1 gulf menhaden (*Brevoortia patronus*) compared by a) natural mortality (0.8, 0.9, 1.0, and 1.1 yr<sup>-1</sup>), 1976-1997, and b) retrospective comparison with decreasing maximum year in catch matrix.

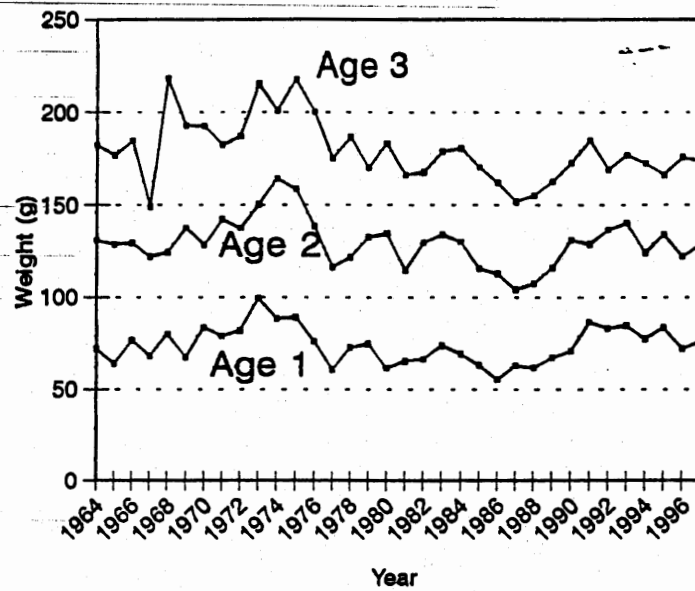


Figure 8. Gulf menhaden (*Brevoortia patronus*) mean weight at age, 1964-1997.

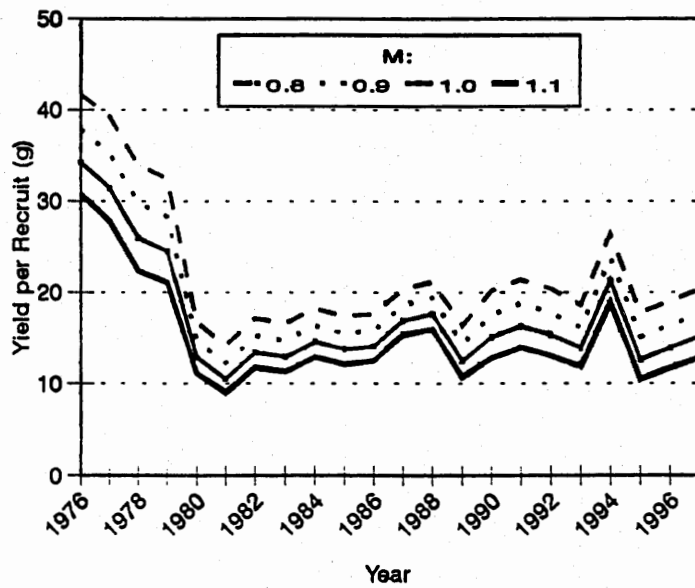


Figure 9. Yield per recruit for gulf menhaden (*Brevoortia patronus*) compared by natural mortality (0.8, 0.9, 1.0, and 1.1 yr<sup>-1</sup>), 1976-1997.

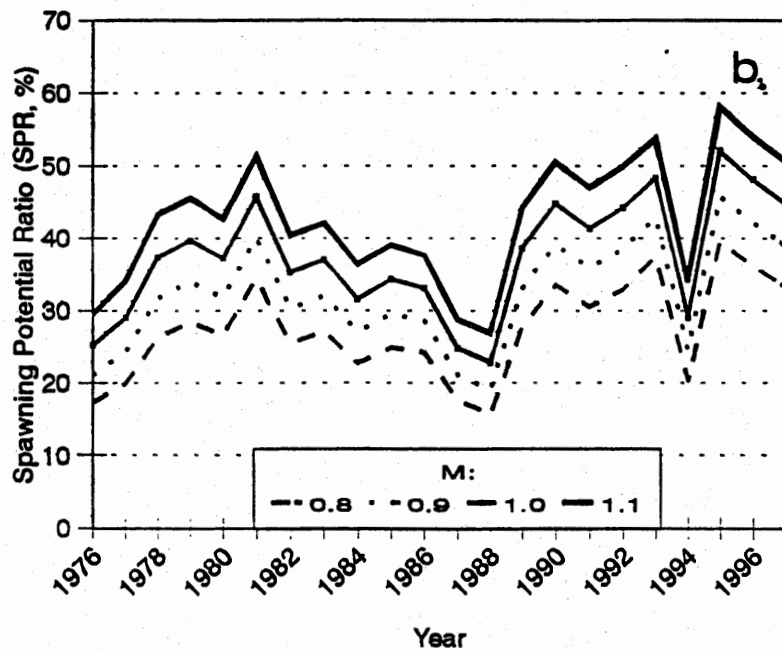
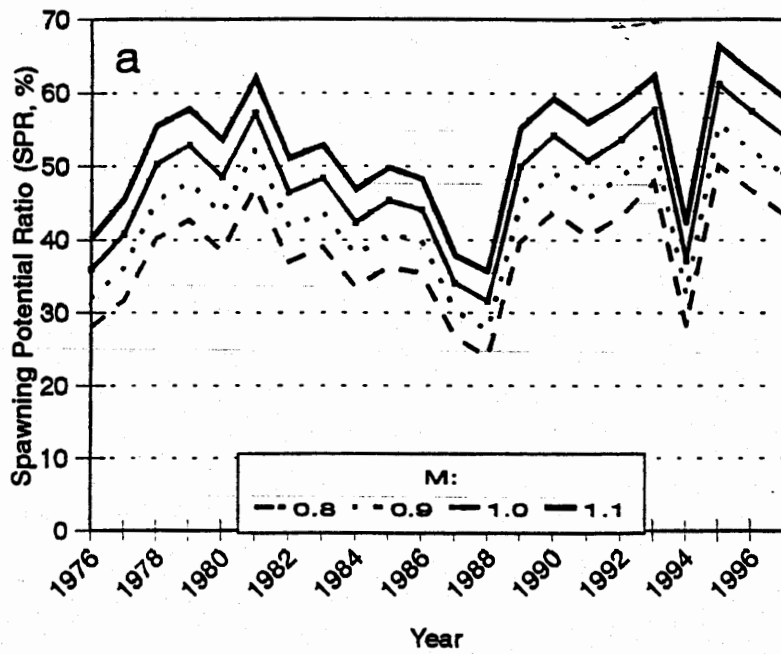


Figure 10. Spawning potential ratio (static SPR) for gulf menhaden (*Brevoortia patronus*) compared by natural mortality (0.8, 0.9, 1.0, and 1.1 yr<sup>-1</sup>) based on a) female biomass and b) egg production, 1976-1997.



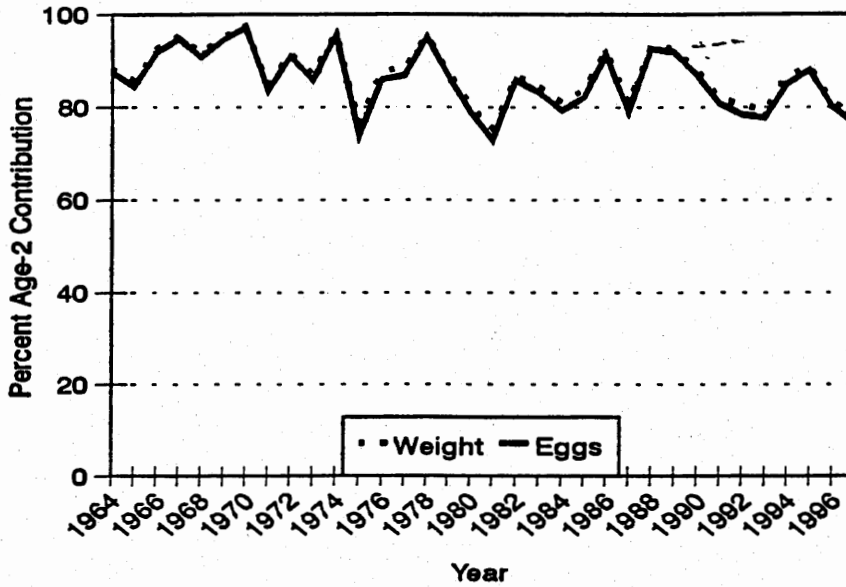


Figure 11. Percent contribution of age 2 gulf menhaden (*Brevoortia patronus*) based on mature female biomass and egg production, 1964-1997.

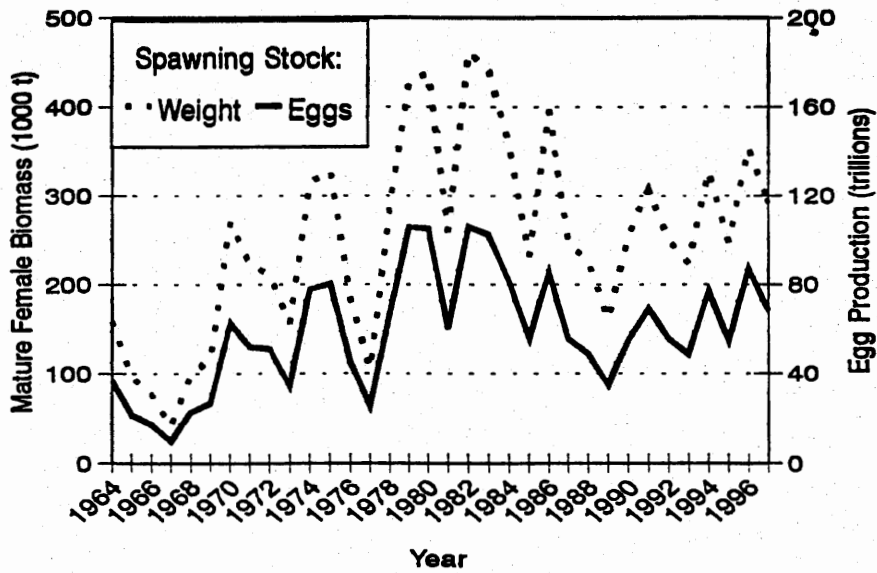


Figure 12. Indices of spawning stock biomass for gulf menhaden (*Brevoortia patronus*) based on mature female biomass and egg production.

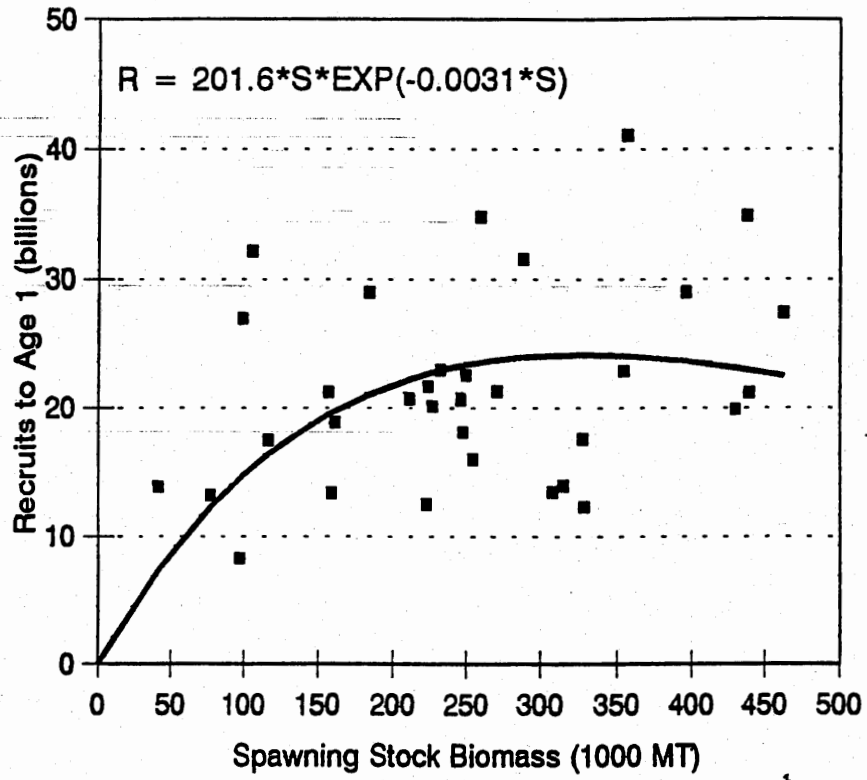


Figure 13. Spawner-recruit relation for gulf menhaden (*Brevoortia patronus*), 1964-1997.

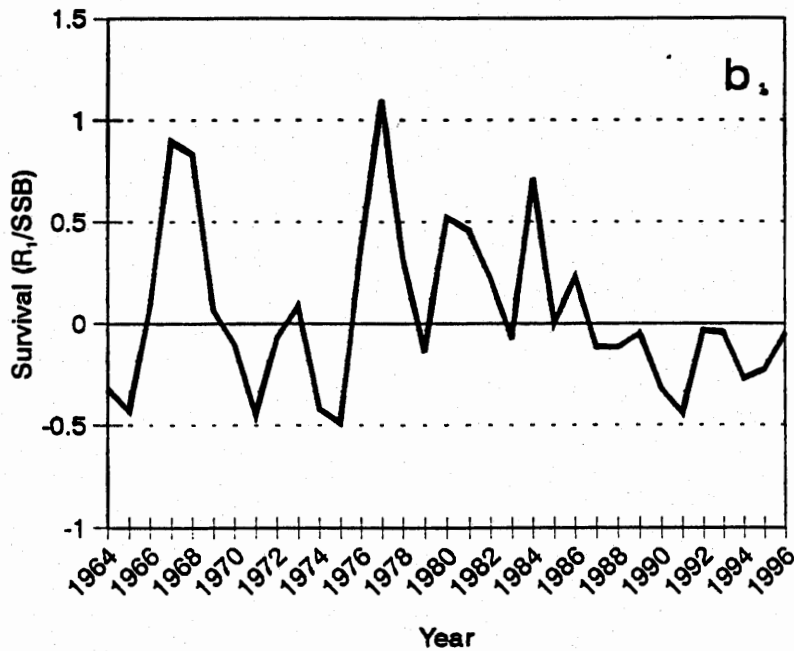
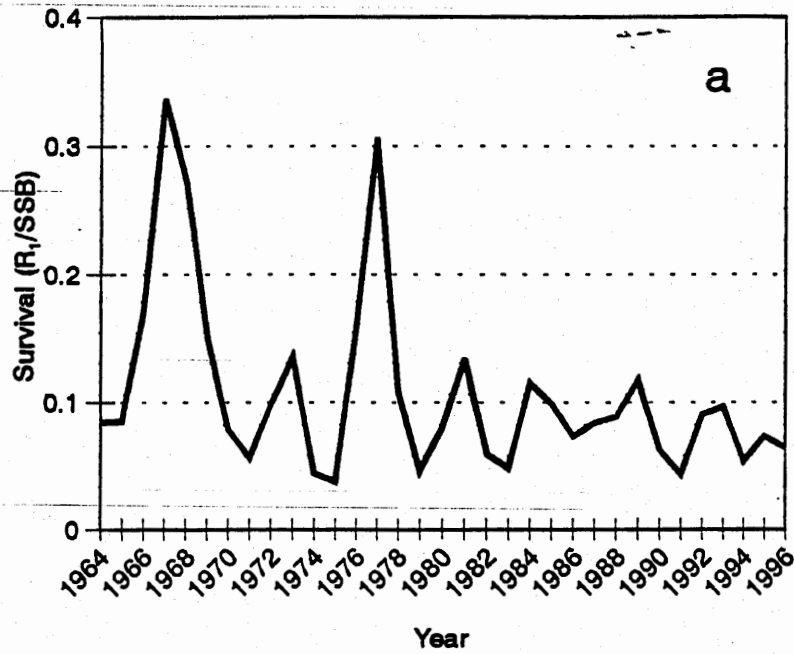


Figure 14. Indices of a) observed and b) relative survival for gulf menhaden (*Brevoortia patronus*) based on recruits to age 1 divided by spawning stock biomass, 1964-1996. Relative survival adjusted by expected survival from Ricker spawner-recruit relationship.

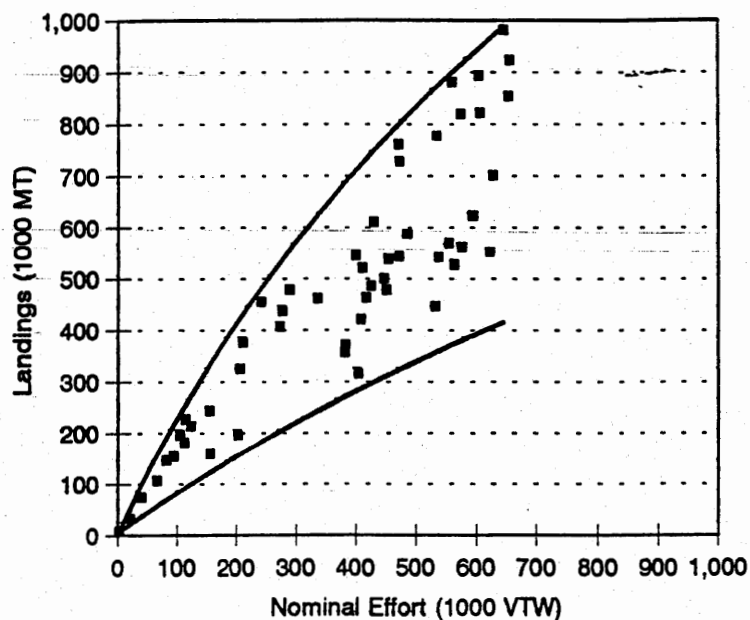


Figure 15. Gulf menhaden (*Brevoortia patronus*) landings plotted against nominal fishing effort (vessel-ton-weeks), 1946-1997.

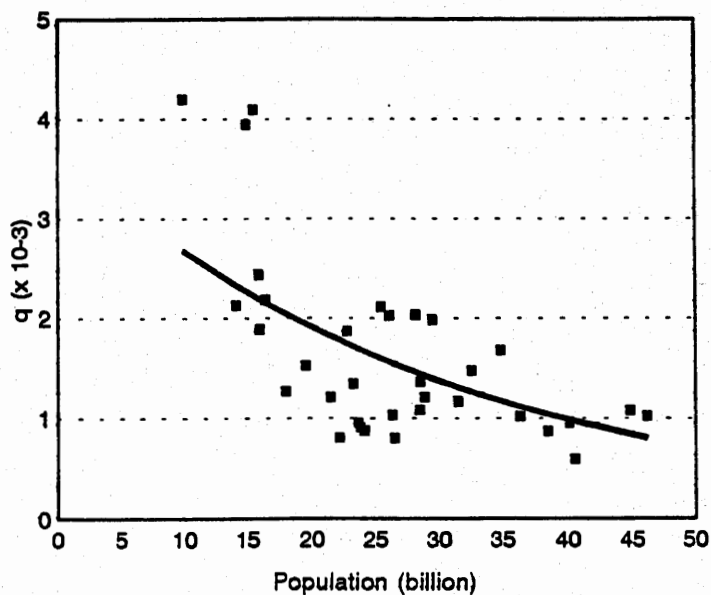


Figure 16. Catchability coefficient ( $q$ ) versus estimated population abundance for gulf menhaden (*Brevoortia patronus*), 1964-1997.

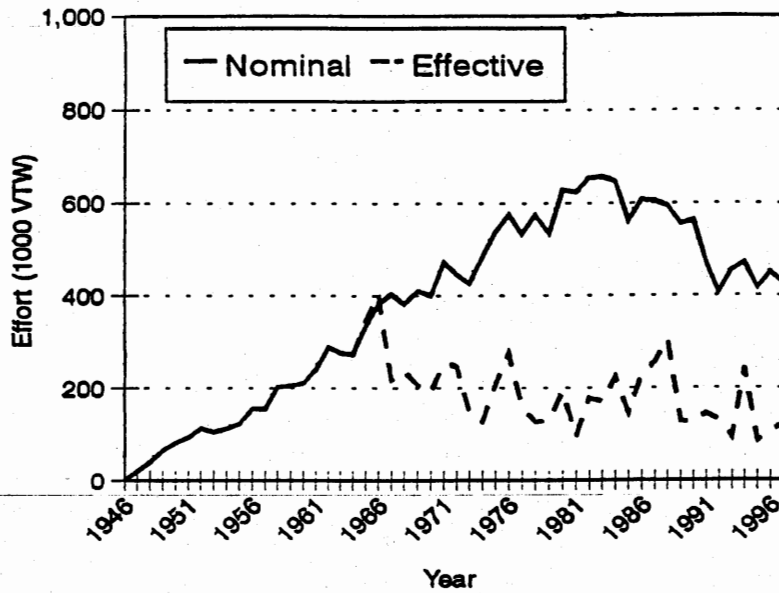


Figure 17. Gulf menhaden (*Brevoortia patronus*) nominal and effective fishing effort from reduction fleet, 1964-1997. Nominal fishing effort only is shown for 1946-1963.

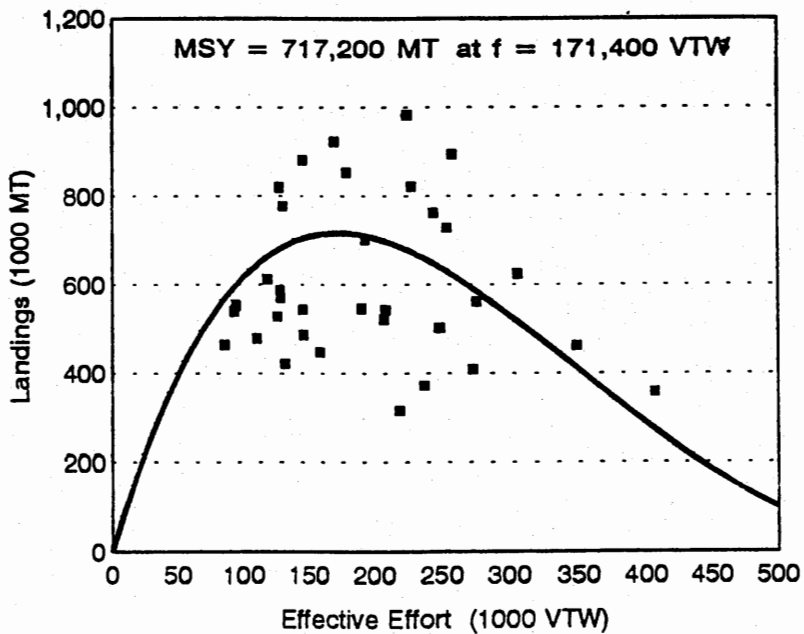


Figure 18. Generalized surplus production model (PRODFIT) for gulf menhaden (*Brevoortia patronus*) using reduction landings and effective fishing effort, 1964-1997.

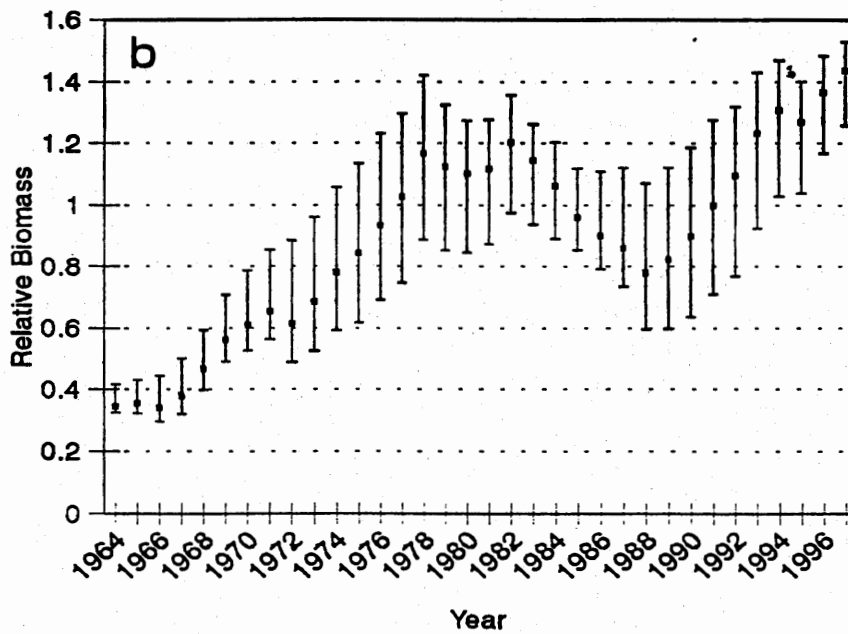
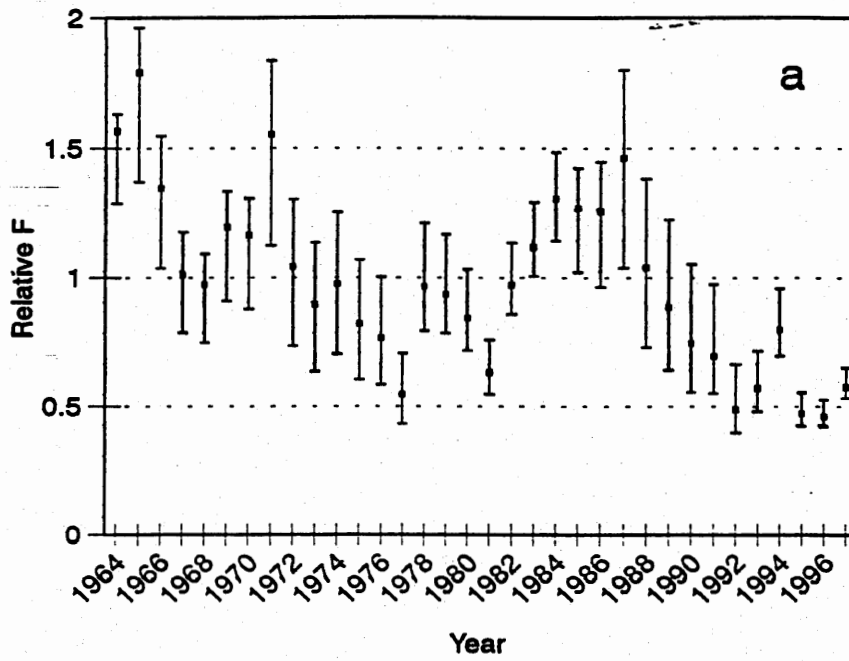


Figure 19. Plots of a) relative fishing mortality ( $F/F_{msy}$ ) and b) relative biomass ( $B/B_{msy}$ ) from ASPIC production model for gulf menhaden (*Brevoortia patronus*), 1964-1997.

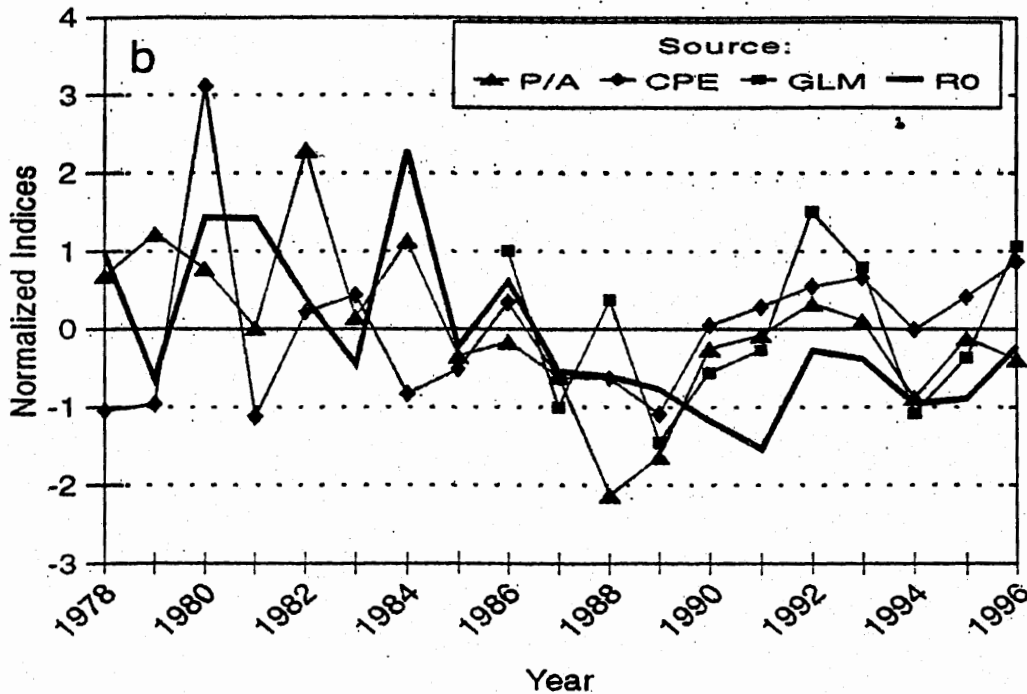
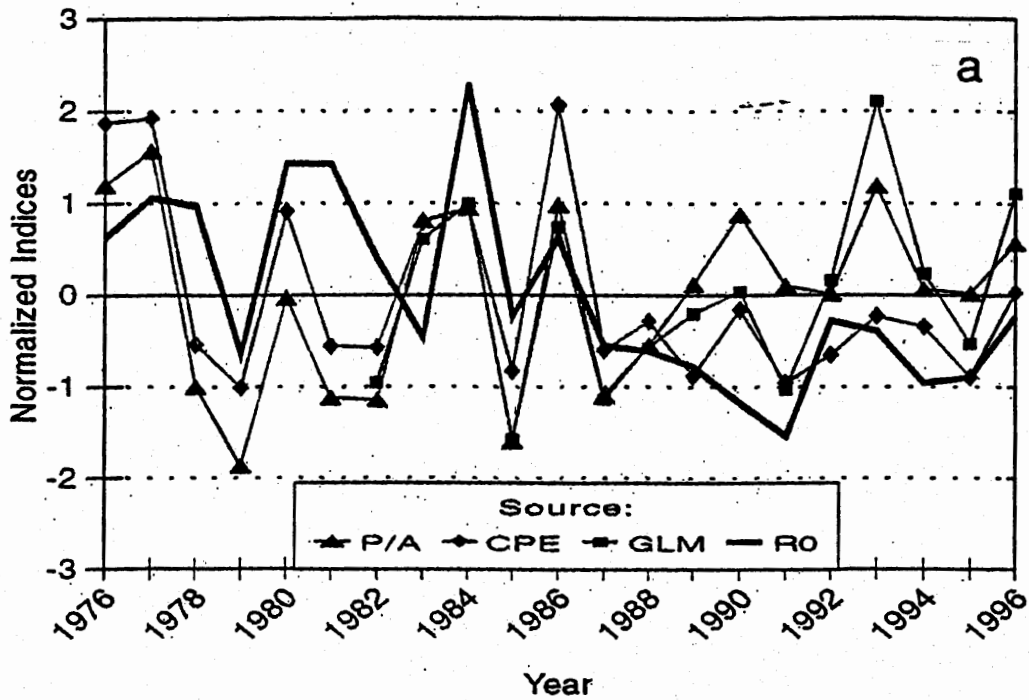


Figure 20. Comparison of normalized half-year old gulf menhaden (*Brevoortia patronus*) recruits with normalized juvenile abundance indices calculated from presence-absence, catch per unit effort, and general linear model from a) Louisiana trawl data and b) Texas bag seine data.

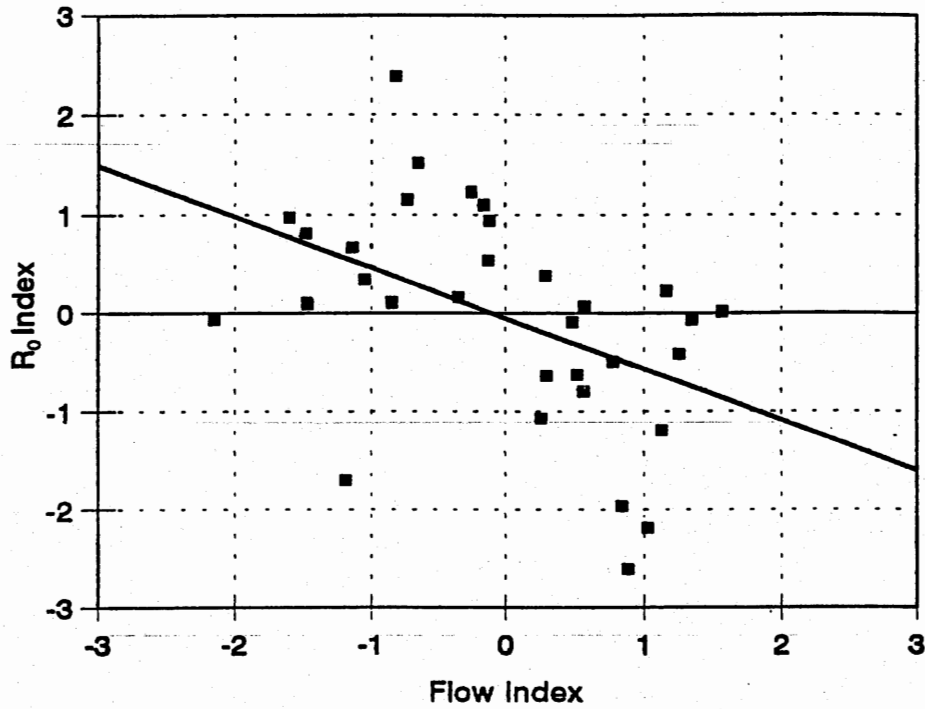
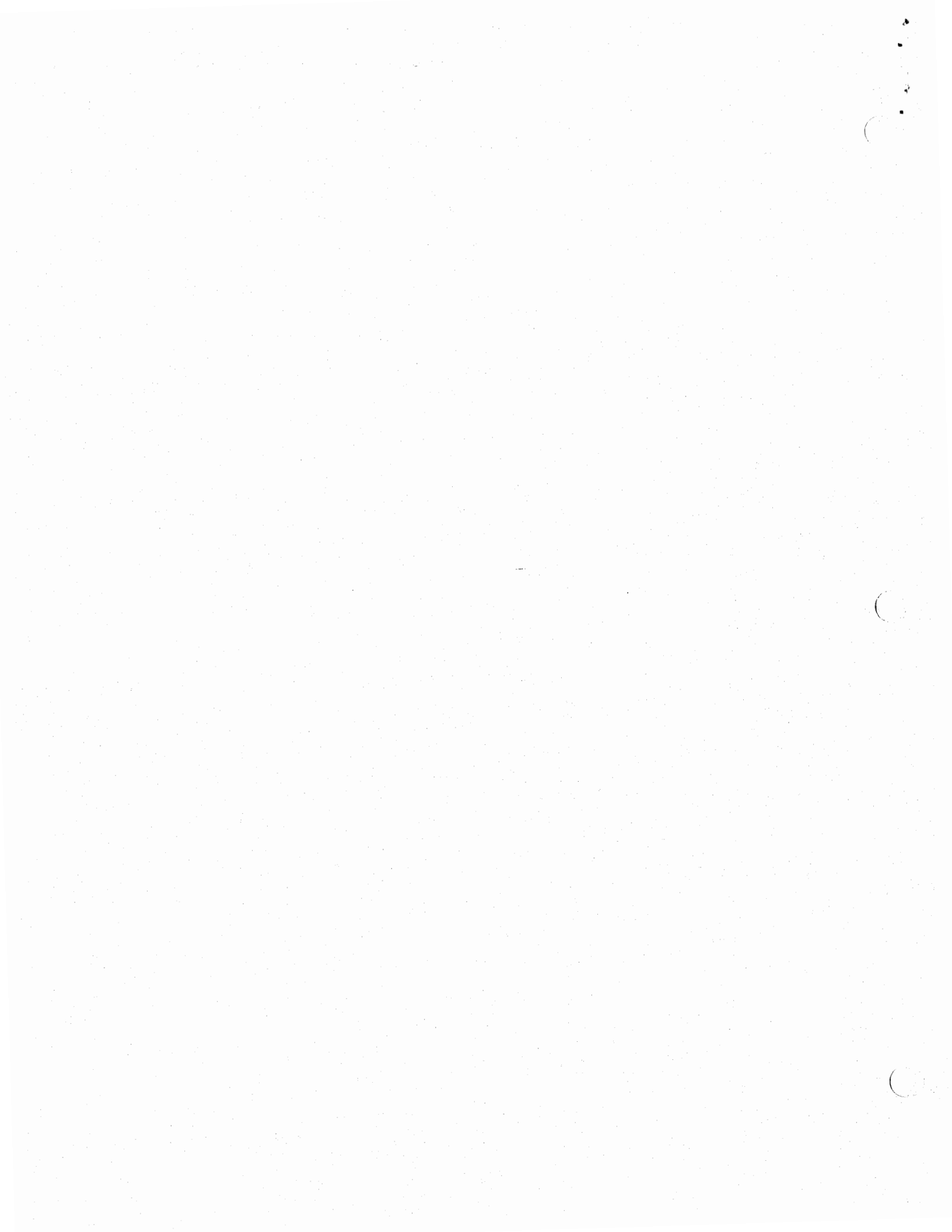


Figure 21. Normalized difference in combined average monthly discharge rates of the Mississippi and Atchafalya rivers ( $\text{m}^3\text{S}^{-1}$ ) and normalized differences in the number of half year old gulf menhaden (*Brevoortia patronus*) recruits ( $r=-0.46$ ,  $P<0.008$ ) (updated for 1991-1997 from Govoni, 1997).





draft

## 14.2 STOCK ASSESSMENT MODELS FOR BLUE CRABS IN THE GULF OF MEXICO

### 14.2.1 Introduction

Stock assessment of Gulf of Mexico blue crab was limited by an absence of reliable fishery dependent data. No reliable catch per unit of effort data (CPUE) were available and there is no information on the population age structure in the commercial fishery. Blue crab fishing effort data is not collected by any Gulf state except Florida where a trip ticket system was initiated in 1985. A potential source for estimating effort was through the number of licenses and traps sold; however, although each Gulf state requires crab fishermen to be licensed, licenses don't reveal the number of traps fished or how intensively they're fished. Guillory (1998c) also reported that 30% of licensed crab fishermen in Louisiana in 1996 didn't crab commercially; therefore, the number of licenses may not reliably reflect the number of active fishermen.

In addition to lack of reliable effort data, stock assessment is hampered by inadequate data on hard crab harvest and the lack of information on recreational catch. Blue crab landings are poor estimates of actual catch. According to Lyles (1976), Moss (1982), and Meeter et al. (1979), blue crabs landings do not necessarily reflect population abundance but may be driven by socio-economic conditions in the fishery. Reported landings are poor estimates of actual harvest. Crabs are often shipped to out-of-state buyers with little or no accountability. Crabs sold in the "basket trade", to the general public and to restaurant and retail outlets often go unreported. Additionally, accuracy of landings may have improved as states began individual programs to collect catch data.

The age structure of blue crab is difficult to determine due to the lack of hard parts for ageing (e.g. dermal scales, otoliths or other bones, and fin spines), and the difficulty in tag retention due to ecdysis. An additional problem with ageing blue crabs is their discrete growth: growth occurs in increments at ecdysis, both sexes experience decreased molting frequency with increasing age, and female crabs undergo a terminal molt at age one. Consequently it is very difficult to assign ages to modal groups in size frequency distributions.

These obstacles limit the options available for assessing stock status and place restrictions on interpretation of results. Virtual population analysis (VPA) is currently a popular assessment tool but was not used in this study because it's an age structured, data intensive technique. Gulland and Rosenberg (1992) also stated that VPAs are excellent for looking at the history of long-lived fish, but are less useful for short-lived fish (blue crab is a short-lived invertebrate). Holistic models don't require data on the age structure of the stock and CPUE, therefore, this approach was used in conjunction with other indicators of stock status, to assess the blue crab population of the Gulf of Mexico. Although holistic models are less data demanding, they require some assumptions not supported by blue crab life history parameters in the Gulf (e.g. spawner-recruit relationship, natural mortality is constant), thus caution should be exercised when interpreting fishing mortality, exploitation rates and MSY. Other indicators of stock status used to assess the blue crab population of the Gulf of Mexico included long term sustainable yield (LSY, or landings history), and the following fishery independent indicators: estimates of relative abundance, length based estimates of fishing mortality, and exploitation rates. Since all Gulf coast states now collect data on crab carapace width as part of their fishery independent monitoring programs, width frequency analysis

played a major role in the assessment. This report represents the first attempt to assess blue crab populations in the Gulf of Mexico.

#### 14.2.2 Materials and Methods

The von Bertalanffy (1938) growth equation was used to model blue crab growth rate,

$$CW_t = CW_\infty(1 - e^{-K(t-t_0)})$$

where  $CW_t$  is the carapace width at time  $t$ ;  $CW_\infty$  is the mean carapace width of very old blue crabs occurring in the Gulf of Mexico;  $K$  is the von Bertalanffy growth coefficient; and  $t_0$  is the time at which carapace width is theoretically zero. This continuous growth function doesn't literally describe the incremental growth of blue crabs, but since model fitting is essentially a data smoothing technique and since members of a cohort molt at different times, the average growth of a cohort becomes a smooth curve (Sparre et al. 1989). Rothschild et al. (1992) modified the von Bertalanffy model to consider incremental growth but this assessment used Rugolo et al. (1997) who concluded that the original model adequately described blue crab widths at ages. Required inputs for the model included estimates of  $CW_\infty$ , widths at ages, and maximum age.

$CW_\infty$  was estimated by the modified Wetherall et al. (1987) technique,

$$(\overline{CW} - CW') = \beta_0 + \beta_1(CW')$$

where  $\overline{CW}$  was the mean carapace width of crabs  $CW'$  in width and larger,  $CW'$  the lower bound of a size interval in a size frequency distribution, and  $\beta_0$  and  $\beta_1$  represent the estimated y-intercept and slope of the fitted line, respectively. Calculating  $\overline{CW}$  by starting with the largest size class and fitting a straight line to the above data pairs provided an estimate of  $CW_\infty$  as the point where the fitted line intercepted the x-axis,

$$CW_\infty = -\frac{\beta_0}{\beta_1}$$

A second estimate of  $CW_\infty$  was obtained through Beverton's (1963) technique of dividing the maximum size occurring in a well sampled stock by 0.95,

$$CW_\infty = \frac{CW_{\max}}{0.95}$$

This approach is based on the observation that, in general, the oldest individuals of a stock grow to reach about 95 percent of their asymptotic length.

Carapace widths at ages were based on Tagatz (1968b) study in the St. Johns River in Florida, a similar latitude of the Gulf of Mexico. Average monthly carapace width measurements were used for crabs hatched in April, July and October.

Maximum age of Gulf of Mexico blue crabs was assumed to be six years. Fischler (1965) found crabs attaining an age of at least five years in a tagging study conducted in North Carolina.

Smith (1997) inferred a maximum age of 5.5 years based on a molt-process model and Churchill (1919) presumed 6 years from anecdotal evidence. Rothschild and Ault (1992) also assumed a maximum age of six years in their assessment of Chesapeake Bay blue crabs.

Once the von Bertalanffy growth model was developed,  $CW_{\infty}$  and  $K$  were used in Hoenig's (1987) formula to compute annual estimates of instantaneous total mortality rate,  $Z$ .

$$Z = \log_e \left[ \frac{(e^{-K(\overline{CW} - CW_{\infty}))} + CW_{\infty} - CW_r}{(\overline{CW} - CW_r)} \right]$$

where  $CW_r$  was the carapace width at full recruitment to the sampling gear and  $\overline{CW}$  was the mean total carapace width of crabs measuring  $CW_r$  and greater.

Instantaneous rate of natural mortality,  $M$ , was estimated according to the International Council for the Exploration of the Sea (ICES) convention of dividing three by the maximum age (Anthony 1982, Vetter 1985).

$$M = \frac{3}{\text{Maximum Age}}$$

This convention results in annual reductions in the number of individuals surviving from age-0 through maximum age, such that under no exploitation, 95% of all individuals in a year class are expected to have died of natural causes by the maximum age. Applying this approach with an assumed maximum age of six years resulted in an estimated natural mortality rate of 0.5.

Once instantaneous rates of total and natural mortalities were estimated, instantaneous rates of fishing mortality,  $F$ , were estimated by subtraction,

$$F = Z - M$$

Exploitation ratio,  $E$ , the fraction of deaths due to fishing, was defined as,

$$E = \frac{F}{F + M}$$

$$= \frac{F}{Z}$$

and can be used to roughly assess if a stock is over fished (Pauly, 1983). According to Gulland (1971) exploitation rate should equal about 0.5 based on the assumption that sustainable yield is optimized when  $F \approx M$ .

Caution should be exercised when interpreting fishing mortality and exploitation rates. The assumption of constant natural mortality implies that fluctuations in total mortality are attributed solely to fluctuations in fishing mortality. Natural mortality is known to vary annually (Vetter 1985) but data aren't available for determining annual fluctuations in blue crab natural mortality in the Gulf.

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Csirke and Caddy's (1983) approach to surplus production modeling was used to estimate maximum sustainable yield, MSY. Their approach fits a convex parabola to a plot of landings versus instantaneous rates of total mortality,

$$Y = \beta_0 + \beta_1 Z - \beta_2 Z^2$$

where Y=yield (i.e. landings). MSY is then estimated as,

$$MSY = \beta_0 - \frac{\beta_1^2}{4\beta_2}$$

and the instantaneous rate of total mortality corresponding to MSY,  $Z_{MSY}$ , by

$$Z_{MSY} = -\frac{\beta_1}{2\beta_2}$$

Blue crab landings were obtained from the Commercial Fisheries Statistics Internet site at [http://www.st.nmfs.gov/st1/commercial/landings/annual\\_landings.html](http://www.st.nmfs.gov/st1/commercial/landings/annual_landings.html) and included hard, soft and peeler crabs for the Gulf only (Florida Atlantic coast landings were excluded).

Annual estimates of relative abundance were expressed as catch per unit of sampling effort (CPUE) and were computed as the mean number of individuals caught in a 16-foot trawl during a ten-minute tow (except for Florida and Texas where 20-foot trawls were used).

The von Bertalanffy growth equation was computed for crabs gulf-wide with subsequent data analyses performed by state. Yearly estimates of instantaneous rates of fishing mortality, exploitation rates, indices of relative abundance, and reported commercial landings were subjected to polynomial regression model building to inspect for long and short term trends through time (all available data and five most recent years, respectively). The convention consists of fitting a simple linear model and testing for a significantly fitting model. Increasing powers of the independent variable are entered step-wise into the model and tested for a significant improvement in fit at each step by testing the additional sum of squares accounted for by entering additional terms into the model. This process is continued until two consecutive non-significant improvements in fit are achieved. The "best" fitting model is the last model to achieve a significant improvement in fit. Simple linear regression was used to model long term data to detect general trends (i.e. linear increasing or decreasing). Statistical hypothesis testing was performed at the  $\alpha=0.05$  level of significance.

### 14.2.3 Results and Discussion

The first step in the assessment procedure was estimating the von Bertalanffy growth parameters. An initial estimate of  $CW_\infty$  is required which is further refined by the model fitting procedure. One estimate of  $CW_\infty$  was derived using the Wetherall et al. (1987) technique by grouping blue crab carapace width measurements into five millimeter (mm) size classes and, beginning with the largest class, computing mean carapace widths for crabs larger than the lower limits of the respective class boundaries (Table 1). Only data points which appeared to lie in a

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straight line (Table 1, data pairs 3 through 11) were used in the regression analysis (Figure 1). The equation for the fitted line was,

$$(\overline{CW} - CW') = 155.800 - 0.582(CW')$$

which resulted in an estimate of  $CW_{\infty} = 268$  mm.

A second, comparative estimate of  $CW_{\infty}$  was derived from Beverton's (1963) technique of dividing maximum carapace width by 0.95. The maximum carapace width occurring in the data base which was considered to be a reliable measurement was 260 mm; therefore, this approach yielded an estimate of 274 mm, a value similar to the one achieved by the Wetherall et al. (1987) method.

The Wetherall et al. (1987) result was used in subsequent analysis since this estimate relied on a greater number of data points and Sparre et al. (1989) considered this approach as perhaps the best to estimate  $CW_{\infty}$ .

Carapace widths at ages derived from Tagatz (1968b) revealed varying growth rates depending on the month hatched, but since general growth increments were required, monthly carapace width measurements were averaged across hatching months (Table 2). This procedure yielded twelve monthly growth increments from larval stage to age one. An additional width at age included the estimate of  $CW_{\infty}=268$  mm and maximum age = 6 years. Thus 13 data points were used to fit the von Bertalanffy growth equation,

$$CW_t = 276(1 - e^{-0.663(t-0.169)})$$

This estimate of  $K = 0.663$  is slightly greater than those reported by Rothschild et al. (1991) and Rugolo et al. (1997) who estimated  $K = 0.506$  and  $0.587$ , respectively for Chesapeake Bay blue crabs. However, blue crab growth is temperature dependent and occurs only above  $9^{\circ}\text{C}$  causing Bay crab growth to cease in November and begin again the following April (Miller and Houde 1998). Thus Gulf crabs may reach maximum size within the first year but Chesapeake Bay crabs may not reach maximum size until their second summer (Smith 1997) thereby explaining the greater growth coefficient for the Gulf.

The values of  $K = 0.663$  and  $CW_{\infty}=276$  were then used as input for Hoenig's (1987) technique of estimating rates of total instantaneous mortality for each state.

#### 14.2.3.1 Florida

Nine years of fishery independent data were available from the Tampa Bay and Charlotte Harbor regions. These data yielded length-based estimates of total instantaneous mortality rates ranging from 1.006 to 1.212 from which rates of fishing mortality were estimated (Table 3). Estimates of fishing mortality ranged from 0.506 to 0.712 and varied with no long or short term trends [ $p=0.6853$  and  $0.6797$ , respectively (Figure 3)]. Estimates of relative abundance ranged from 1.7 to 3.3 individuals/ten-minutes and also showed no long or short term trends through years [ $p=0.0.8598$  and  $0.6211$ , respectively (Figure 4)]. Exploitation rates ranged from 0.503 to 0.588 and were near Gulland's (1971) optimum value of 0.5. They likewise showed no trend through time

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[ $p=0.7349$  and  $0.7088$ , respectively (Figure 5)]. Reported landings ranged from 684,400 in 1950 to 20,609,200 lbs in 1965. A cubic polynomial best described the landings trend through years ( $p=0.0001$ , Figure 6). According to the fitted line, landings rose from 1950 to 1968, declined until 1992, and increased from 1992 to present. No short term trend was detected and there was no drastic decline from which there was no recovery. The average landings for the 48 year period was 10,121,413 lbs (SE=637,054).

A concave, rather than convex, parabola resulted from fitting a quadratic function to landings versus total mortality; therefore, landings were reciprocally transformed then scaled by multiplying by  $10^6$ . Fitting a quadratic model to the transformed data resulted in the appropriate parabolic form (Figure 7). The difficulty in fitting a convex parabola in the original scale was the result of relatively few data pairs and a narrow range in values of total mortality estimates. A wide range of values is desired, preferably from early stages in the fishery's development. Using the fitted parabolic function and de-transforming back to the arithmetic scale resulted in an MSY estimate of 7.5 million lbs. This appears to be a conservative estimate given the observed historical landings which have exceeded 7.5 million lbs for 38 of the 48 year history. The conservative nature of the estimate is due in part to the landings transformation (a harmonic mean is always less than an arithmetic mean given the same data). The corresponding fishing mortality associated with MSY,  $F_{MSY}$ , was 0.568. This also appears to be a conservative estimate as fishing mortality estimates from 1989 to 1997 have exceeded this value for seven of the nine years but with no apparent detriment to the fishery. If MSY was underestimated by the harmonic transformation then so was  $F_{MSY}$ . Another caveat of these analyses is that in comparing mortality rates to landings it is assumed that the Tampa Bay and Charlotte Harbor data adequately represent the entire Florida west coast. This assumption has not been verified. An alternative to estimating MSY is to use LSY, which is 10.1 million lbs. This value was exceeded in 26 of 48 years and was doubled in 1965, again with no apparent negative affect to the fishery. Thus the Florida population appears able to withstand the fishing effort associated with landings of about 10 million lbs ( $F_{LSY} \approx 0.764$ ).

In considering analytical results in concert, the blue crab population off the Florida west coast doesn't appear to be stressed. Although the fishery is operating above the MSY level computed via the surplus production model (7.5 million lbs), the estimate may be conservative because of a data transformation, relatively few data points, a narrow range of total mortality estimates, and a yet unproven assumption that two geographic regions adequately represent the entire west coast. If the fishery were in fact operating above MSY, a declining trend in estimates of relative abundance is expected but was not observed. A more realistic estimate of MSY appears to be 10 million lbs. The Florida west coast population appears to be in a steady state as no declining trends were found in estimates of relative abundance or landings, and no increasing trends were detected in exploitation rates or fishing mortality.

#### 14.2.3.2 Alabama

Ten years of fishery independent data were available for the state of Alabama. Length-based estimates of total mortality ranged from 1.023 to 1.286 and fishing mortality estimates from 0.523 to 0.786 (Table 4). No significant long or short term trends in fishing mortality estimates were observed [ $p=0.8405$  and  $0.3952$ , respectively (Figure 8)]. Estimates of relative abundance ranged from 1.3 to 8.1 individuals/ten-minute tow and also showed no significant long or short term trends

[ $p=0.6512$  and  $0.4165$ , respectively (Figure 9)]. Exploitation rates were slightly greater than 0.5 and ranged from 0.511 to 0.611, resulting in no significant trends [ $p=0.8332$  and  $0.4384$ , respectively (Figure 10)]. Landings ranged from 498,800 in 1960 to 4,216,125 lbs in 1984. A linear model with an increasing slope best described the long term trend through years ( $p=0.0001$ , Figure 11). A nearly significant increasing short term trend was also observed ( $p=0.0537$ ). There was no decline in landings from which there was no recovery. Landings averaged 1,952,926 lbs (SE=136,947) for the period 1950 - 1997.

A concave rather than convex parabola again resulted from fitting a quadratic function to landings versus total mortality estimates. The scaled, reciprocal transformation was again employed which resulted in the appropriate parabolic form (Figure 12). The difficulty in fitting a concave parabola to the data in the original scale was due to the relatively few data pairs and a narrow range of values for total mortality estimates. The fitted function resulted in an MSY estimate of 2.8 million lbs, a reasonable estimate considering the historical average was 2.0 million lbs and the most recent five year average was 2.9 million lbs. Although there was a significant increase over time, landings appear to have stabilized from 1984 to present. The average for this 14 year period was 3.1 million lbs which supports the MSY estimate. Fishing mortality corresponding to MSY was estimated at 0.630. The ten year average was slightly greater than  $F_{MSY}$  (0.648) but the most recent five year average was less (0.618).

Considering all data in aggregate, the blue crab population does not appear to be stressed. The fishery is operating near MSY with less fishing mortality than is required to achieve MSY. No declining trends were detected in landings or estimates of relative juvenile abundance, and there was no significant increase in estimates of fishing mortality or exploitation rates.

#### 14.2.3.3 Mississippi

Twenty four years of fishery independent data were available to assess the blue crab population in Mississippi. Estimates of total mortality ranged from 0.835 to 1.882 (Table 5). Fishing mortality estimates ranged from 0.335 to 1.382 and resulted in no significant long term trend through years but a significant short term, quadratic trend [ $p=0.0694$  and  $0.0086$ , respectively (Figure 13)]. Fishing mortality estimates dropped from 1992 to 1994 but have stabilized since then. Relative juvenile abundance estimates ranged from 0.7 to 14.5 individuals/ten-minute tow and resulted in a significant decrease in the long term, but a significant increase in the short term [ $p=0.0133$  and  $0.0068$ , respectively (Figure 14)]. Exploitation rates ranged from 0.401 to 0.734 and trend analysis mirrored that of fishing mortality. There was no significant long term but a significant short term, quadratic trend [ $p=0.0655$  and  $0.0153$ , respectively (Figure 15)]. Landings ranged from 171,667 lbs in 1994 to 4,040,100 lbs in 1950 and averaged 1,482,410 lbs (SE=113,176). A cubic polynomial best described the long term trend in landings ( $p=0.0001$ ) and a significantly increasing linear trend best described the short term trend ( $p=0.0486$ ). According to the fitted polynomial, landings generally decreased from 1950 to 1965 and then remained stable until 1980. A slight decline occurred until 1988 when the decline became more pronounced (Figure 16). There was a significant decrease in landings since 1950 ( $p=0.0001$ ).



MSY was estimated at 1.3 million lbs (Figure 17). This estimate appears to be plausible as the 48-year average landings equaled 1.5 million lbs. Estimated  $F_{MSY}$  was 0.892. The 24 year average  $F$  was less than  $F_{MSY}$  (0.780) as was the most recent 5 year average (0.561).

Assessing the Mississippi blue crab population was difficult due to conflicting results. The drastic decline in landings observed from 1987 to 1994 was related to the introduction of management regulations restricting harvest and fishing area, increased product being landed out of state, a loss of processing capacity, and the economic interdependency of the crab fishery with other fisheries (Perry et al. 1998). Thus, landings data are not an accurate indicator of population size. Although long term estimates of juvenile abundance also decreased over the long term, a cause and effect relationship between reported landings and juvenile abundance indices is not implied. Estimates of fishing mortality and exploitation rates resulted in no long term trends indicating fishing pressure didn't significantly increase, nor did the fishery exploit a significantly greater portion of the population. Also, fishing mortality exceeded  $F_{MSY}$  in only two of the eight years, 1988 and 1991. This result was not unprecedented as similar levels of  $F$  were observed in 1973 and 1975 but were not followed by a substantial decline in landings. These results indicate that the fishery was not stressed. Landings and estimates of relative abundance have increased significantly in the short term, estimates of fishing mortality and exploitation rates have declined significantly, and the fishery has operated considerably below MSY and  $F_{MSY}$ .

#### 14.2.3.4 Louisiana

Estimates of total mortality from 1967 to 1996 ranged from 0.779 to 1.572 (Table 6). Fishing mortality estimates yielded a significant quadratic long term trend ( $p=0.0001$ ) and ranged from 0.280 to 1.072 (Figure 18). There was a significant increase in fishing mortality estimates through years ( $p=0.0001$ ). No significant short term trend was detected ( $p=0.5040$ ). A cubic polynomial best described the long term trend of relative abundance estimates through time [ $p=0.0005$  (Figure 19)] and no significant short term trend was observed ( $p=0.3049$ ). According to the fitted line, abundance of juveniles decreased from 1967 to 1973, increased until 1991, and decreased thereafter. There was a significant long term trend increase in juvenile abundance ( $p=0.0005$ ) ranging from 2.5 to 12.5 individuals/ten-minute tow. This increase may be related to estuarine marsh loss. As estuaries erode and subside, habitat favorable for survival of early life stages of blue crab may temporarily increase. Exploitation rates ranged from 0.359 to 0.682 and significantly increased linearly in the long term ( $p=0.0001$ ) but not in the short term trend [ $p=0.4676$  (Figure 20)]. Reported landings ranged from 5,891,600 lbs in 1964 to 53,716,989 lbs in 1988. A fifth-degree polynomial best described the long term landings trend over time ( $p=0.0001$ ) and no short term trend was detected [ $p=0.9203$  (Figure 21)]. According to the polynomial, landings peaked in 1992 and declined thereafter. There was a significant long term increase in landings ( $p=0.0001$ ). The average landings for the 48 year period was 20,977,176 lbs (SE=2,078,289).

MSY was estimated at 42.8 million lbs (Figure 22). This is a reasonable estimate because the most recent five year average was 40.6 million lbs. The 30 year average  $F$  (0.615) the most recent five year average (0.966) were below  $F_{MSY}$  (1.125).

The blue crab population of Louisiana is not stressed. Although estimates of fishing mortality and exploitation rates significantly increased over time, there were significant long term increases

in both landings and estimates of juvenile abundance. Additionally, all data points on the MSY curve lie along the ascending arm of the parabola (Figure 22). The fishery appears to be operating considerably below  $F_{MSY}$  and could probably sustain an increase in fishing effort with no harm to the population.

#### 14.2.3.5 Texas

Fifteen years of fishery independent data from the Texas coast yielded total mortality estimates ranging from 1.091 to 1.320 (Table 7). Estimates of fishing mortality ranged from 0.591 to 0.820 and showed a significantly increasing linear, long term trend ( $p=0.0157$ ). No short term trend was detected [ $p=0.1978$  (Figure 23)]. Relative juvenile abundance estimates ranged from 1.7 to 4.0 individuals/ten-minute tow and displayed a quadratic long term relationship through time and no short term relationship [ $p=0.0362$  and  $0.2331$ , respectively (Figure 24)]. According to the fitted line, estimates of relative juvenile abundance increased from 1982 to 1988, and have decreased since then. Although no short term trend was detected, the three most recent estimates of juvenile abundance increased. Estimated exploitation rates varied from 0.542 to 0.621 (Figure 25). A significant long term increase in exploitation rates was present ( $p=0.0139$ ) and no short term trend [ $p=0.2147$  (Figure 25)]. Landings ranged from 195,400 lbs in 1956 to 11,688,000 in 1987 and averaged 5,189,726 lbs (SE=467,065). A cubic relationship best described the long term trend in landings through years ( $p=0.0001$ ) and no short term trend was detected [ $p=0.4062$  (Figure 26)]. The fitted line indicated that landings increased from 1950 to 1985 and decreased thereafter. In general, landings significantly increased from 1950 to 1997 ( $p=0.0001$ ).

The scaled, reciprocal transformation was used to achieve a concave parabola to estimate MSY (Figure 27). MSY was estimated at 6.7 million lbs, a reasonable figure in comparison to the historical average or 5.2 million (the historical average was influenced by low landings from 1950 to 1959, omitting these years resulted in an average of 6.4 million lbs). Average landings for the most recent five years was 6.3 million lbs. Estimated  $F_{MSY}$  was 0.731. The five year and fifteen year averages for fishing mortality rates were 0.719 and 0.741, respectively.

Indicators of stock status suggest that the blue crab population of Texas may be over-exploited. Landings and estimates of juvenile abundance decreased significantly over time, and estimates of fishing mortality and exploitation rates increased significantly. The fishery consistently operated above MSY from 1977 to 1994. Similarly, estimates of  $F$  have exceeded  $F_{MSY}$  in eight of the most recent nine years. The most recent five years of the fishery indicate that, on average, it has operated above  $F_{MSY}$  and slightly below MSY.

#### 14.2.4 Summary and Conclusions

The von Bertalanffy (1983) growth equation was fitted to 13 blue crab widths at ages to estimate the mean carapace width of very old Gulf crabs ( $CW_{\infty}=276$  mm) and the von Bertalanffy growth coefficient ( $K=0.663$ ). These estimates were then used in Hoenig's (1987) formula for estimating annual rates of total instantaneous mortality. Natural mortality was estimated by the ICES convention ( $M=0.500$ ) and annual estimates of fishing mortality were estimated by subtracting natural from total mortality rates. Exploitation rates were estimated by dividing rates of fishing by total mortality. Polynomial model building was used to determine long and short term trends in

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landings; and estimates of total mortality, exploitation rates and relative abundance. Csirke and Caddy's (1983) method of surplus production modeling was used to estimate MSY and  $F_{MSY}$  by fitting a convex parabola to landings and estimated total mortality rates. Analyses were performed by state.

Although the fishery in Florida may be operating above the MSY estimated from the surplus production model, there were no significant declining trends in estimates of relative abundance or landings, and no significantly increasing trends in fishing mortality or exploitation rates. The estimated MSY is considered conservative due to a transformation of the landings data, relatively few data points, a relatively narrow range in estimates of total mortality and a yet to be verified assumption that two regions adequately represent the entire Florida west coast. The historical average landings may be a better estimate of MSY.

The Alabama blue crab population appears to be stable and is operating near MSY and  $F_{MSY}$ . No significant declines were observed in estimates of relative abundance or landings, and no significant increases were observed in estimates of fishing mortality or exploitation rates.

Reliable assessment of the Mississippi population was hindered by the lack of adequate harvest data. The dramatic decline in landings that occurred after 1987 is not considered indicative of stock availability but rather the introduction of management regulations restricting harvest and fishing area, increased product being landed out of state, and loss of processing capacity (Perry et al. 1998). Estimates of fishing mortality and exploitation rates showed no significantly increasing trends and the fishery appears to be operating below  $F_{MSY}$ .

The Louisiana population didn't appear to be overexploited. There has been a significant increase in landings and the fishery appears to be operating below MSY and  $F_{MSY}$ . Estimates of fishing mortality and exploitation rates increased significantly but so have estimates of relative juvenile abundance.

Assessment of the Texas population indicated that the fishery may be over-exploited. Landings and estimates of relative abundance are currently decreasing, and estimates of fishing mortality and exploitation rates are significantly increasing. The fishery appears to have operated above the estimated MSY from 1977 to 1994 and has fished above  $F_{MSY}$  for eight of the most recent nine years.

**Table 1.** Blue crab carapace width data used in the Wetherall et al. (1987) procedure to estimate  $CW_{\infty}$ , the mean carapace width of very old Gulf blue crabs.  $CW'$  is the lower boundary of 5-mm size classes, and  $CW$  is the mean carapace width of blue crabs  $CW'$  and larger.

Data Pair	$CW'$	$CW$	$CW - CW'$
1	205	231.051	26.051
2	210	240.000	30.000
3	215	246.875	31.875
4	220	247.628	27.628
5	225	248.986	23.986
6	230	251.591	21.591
7	235	253.800	18.800
8	240	255.962	15.962
9	245	257.717	12.717
10	250	261.323	11.323
11	255	262.500	7.500

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**Table 2.** Carapace widths (mm) by month of St. Johns River, Florida blue crabs hatched in April, July and October (Tagatz, 1968).

Month	Month Hatched			Mean Carapace Width
	April	July	October	
1	1 <sup>1</sup>	1 <sup>1</sup>	1 <sup>1</sup>	1.0
2	5	5	5	5.0
3	12	12	8	10.7
4	23	23	10	18.7
5	46	46	12	34.7
6	58	46	15	39.7
7	90	58	29	59.0
8	113	58	46	72.3
9	113	72	72	85.7
10	113	90	90	97.7
11	113	113	113	113.0
12	142	142	142	142.0

<sup>1</sup> Larvae

**Table 3.** Estimated total and fishing mortality rates, relative abundance (CPUE), exploitation rates and reported landings of blue crab for the Tampa Bay and Charlotte Harbor regions of Florida, 1989-1997.

Year	Total Mortality (Z)	Fishing Mortality (F)	CPUE	Exploitation Rate (E)	Landings (lbs)
1989	1.111	0.611	2.9	0.550	8,197,383
1990	1.081	0.581	1.9	0.537	6,914,878
1991	1.067	0.567	1.7	0.532	5,234,967
1992	1.152	0.652	2.6	0.566	7,653,632
1993	1.178	0.678	2.9	0.576	8,458,739
1994	1.212	0.712	2.7	0.588	8,463,934
1995	1.006	0.506	1.7	0.503	8,691,292
1996	1.098	0.598	3.3	0.544	11,199,662
1997	1.169	0.669	2.0	0.572	9,312,399
Mean	1.119	0.619	2.4	0.552	
SE	0.021	0.021	0.2	0.009	

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**Table 4.** Estimated total and fishing mortality rates, relative abundance (CPUE), exploitation rates and reported landings of blue crab for the state of Alabama, 1985-1994.

Year	Total Mortality (Z)	Fishing Mortality (F)	CPUE	Exploitation Rate (E)	Landings (lbs)
1985	1.071	0.571	2.5	0.533	2,260,826
1986	1.137	0.637	2.6	0.560	2,886,211
1987	1.210	0.710	1.3	0.587	2,495,632
1988	1.286	0.786	2.0	0.611	3,869,458
1989	1.184	0.684	8.1	0.578	4,090,476
1990	1.110	0.610	3.8	0.550	3,302,889
1991	1.117	0.617	5.0	0.552	2,731,120
1992	1.023	0.523	2.3	0.511	3,550,370
1993	1.116	0.616	2.6	0.552	2,554,158
1994	1.221	0.721	3.4	0.591	2,687,961
Mean	1.148	0.648	3.4	0.562	
SE	0.025	0.025	0.6	0.009	

draft

**Table 5.** Estimated total and fishing mortality rates, relative abundance (CPUE), exploitation rates and reported landings of blue crab for the state of Mississippi, 1973-1996.

Year	Total Mortality (Z)	Fishing Mortality (F)	CPUE	Exploitation Rate (E)	Landings (lbs)
1973	1.641	1.141	3.0	0.695	1,814,500
1974	1.385	0.885	8.0	0.639	1,667,000
1975	1.882	1.382	8.6	0.734	1,136,600
1976	1.444	0.944	13.6	0.654	1,334,500
1977	1.309	0.809	5.0	0.618	1,918,600
1978	1.401	0.901	14.5	0.643	1,942,300
1979	1.413	0.913	13.7	0.646	1,311,450
1980	1.237	0.737	9.6	0.596	2,759,600
1981	0.835	0.335	0.8	0.401	1,866,550
1982	0.986	0.486	2.9	0.493	1,297,100
1983	0.997	0.497	0.7	0.498	1,139,690
1984	0.978	0.478	4.7	0.489	2,250,340
1985	1.277	0.777	4.6	0.608	1,648,900
1986	1.611	1.111	3.4	0.690	1,302,810
1987	1.109	0.609	1.6	0.549	1,374,050
1988	1.766	1.266	7.9	0.717	853,090
1989	1.102	0.602	4.7	0.546	658,900
1990	1.279	0.779	4.1	0.609	394,230
1991	1.776	1.276	8.4	0.718	455,680
1992	1.247	0.747	0.9	0.599	444,890
1993	1.112	0.612	1.1	0.550	253,460
1994	0.990	0.490	2.0	0.495	171,670
1995	0.975	0.475	2.9	0.487	320,840
1996	0.978	0.478	3.0	0.489	408,530
Mean	1.280	0.780	3.4	0.590	
SE	0.060	0.060	0.9	0.018	



draft

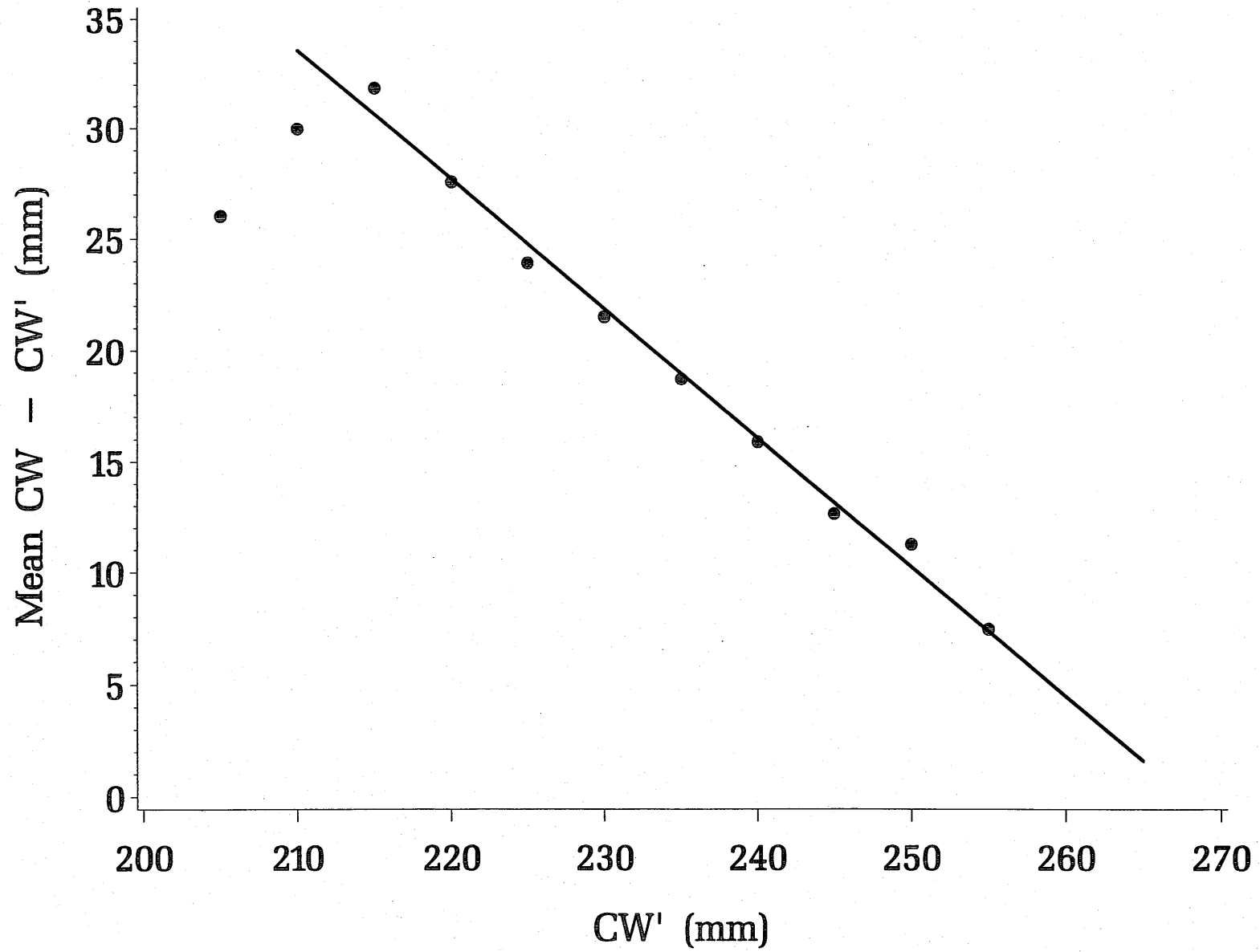
**Table 6.** Estimated total and fishing mortality rates, relative abundance (CPUE), exploitation rates and reported landings of blue crab for the state of Louisiana, 1967-1996.

Year	Total Mortality (Z)	Fishing Mortality (F)	CPUE	Exploitation Rate (E)	Landings (lbs)
1967	0.780	0.280	5.1	0.359	7,705,000
1968	0.934	0.434	5.3	0.465	9,834,800
1969	1.003	0.503	5.4	0.502	11,798,500
1970	0.886	0.386	5.7	0.436	10,343,800
1971	0.996	0.496	6.3	0.498	12,312,600
1972	1.057	0.557	7.4	0.527	15,184,800
1973	0.968	0.468	5.4	0.484	23,199,600
1974	0.867	0.367	5.1	0.423	20,735,500
1975	0.925	0.425	3.2	0.459	17,254,300
1976	0.881	0.381	3.1	0.433	15,299,200
1977	0.918	0.418	2.5	0.455	16,379,000
1978	1.046	0.546	4.0	0.522	15,207,400
1979	1.127	0.627	8.6	0.556	21,477,900
1980	1.279	0.779	8.9	0.609	18,299,700
1981	1.013	0.513	5.0	0.506	16,326,100
1982	1.189	0.689	7.7	0.580	17,381,800
1983	1.119	0.619	9.1	0.553	19,666,600
1984	0.949	0.449	6.6	0.473	29,678,300
1985	1.014	0.514	6.7	0.507	29,930,600
1986	1.148	0.648	5.6	0.565	31,690,300
1987	1.167	0.667	9.0	0.571	52,483,900
1988	1.250	0.750	9.8	0.600	53,717,000
1989	1.251	0.751	7.2	0.600	33,559,100
1990	1.171	0.671	12.5	0.573	39,135,700
1991	1.175	0.675	11.7	0.574	51,287,700
1992	1.372	0.872	8.8	0.635	51,984,100
1993	1.460	0.960	11.9	0.658	45,945,400
1994	1.572	1.072	10.6	0.682	36,764,800
1995	1.45	0.965	5.1	0.659	36,966,500
1996	1.460	0.957	7.3	0.657	40,001,200
Mean	1.115	0.615	7.0	0.537	
SE	0.037	0.037	0.5	0.015	

**Table 7.** Estimated total and fishing mortality rates, relative abundance (CPUE), exploitation rates and reported landings of blue crab for the state of Texas, 1967-1996.

Year	Total Mortality (Z)	Fishing Mortality (F)	CPUE	Exploitation Rate (E)	Landings (lbs)
1982	1.101	0.601	2.8	0.546	8,010,000
1983	1.132	0.632	2.9	0.558	8,829,000
1984	1.172	0.672	2.5	0.574	7,229,000
1985	1.199	0.699	3.4	0.583	9,722,000
1986	1.177	0.677	3.2	0.575	9,482,000
1987	1.091	0.591	2.9	0.542	11,688,000
1988	1.304	0.804	3.6	0.616	10,428,000
1989	1.306	0.806	3.1	0.617	9,123,300
1990	1.320	0.820	3.5	0.621	8,598,700
1991	1.275	0.775	3.4	0.608	6,123,200
1992	1.237	0.737	4.0	0.596	6,160,600
1993	1.166	0.666	3.4	0.571	8,286,400
1994	1.248	0.748	3.9	0.599	5,094,300
1995	1.264	0.764	1.7	0.604	5,447,100
1996	1.288	0.788	2.0	0.612	6,310,500
Mean	1.219	0.719	3.0	0.588	
SE	0.020	0.020	0.2	0.007	

draft



**Figure 1.** Wetherall et al. (1987) plot used to estimate  $CW_{\infty}$ , the average carapace width of very old Gulf of Mexico blue crabs.

draft

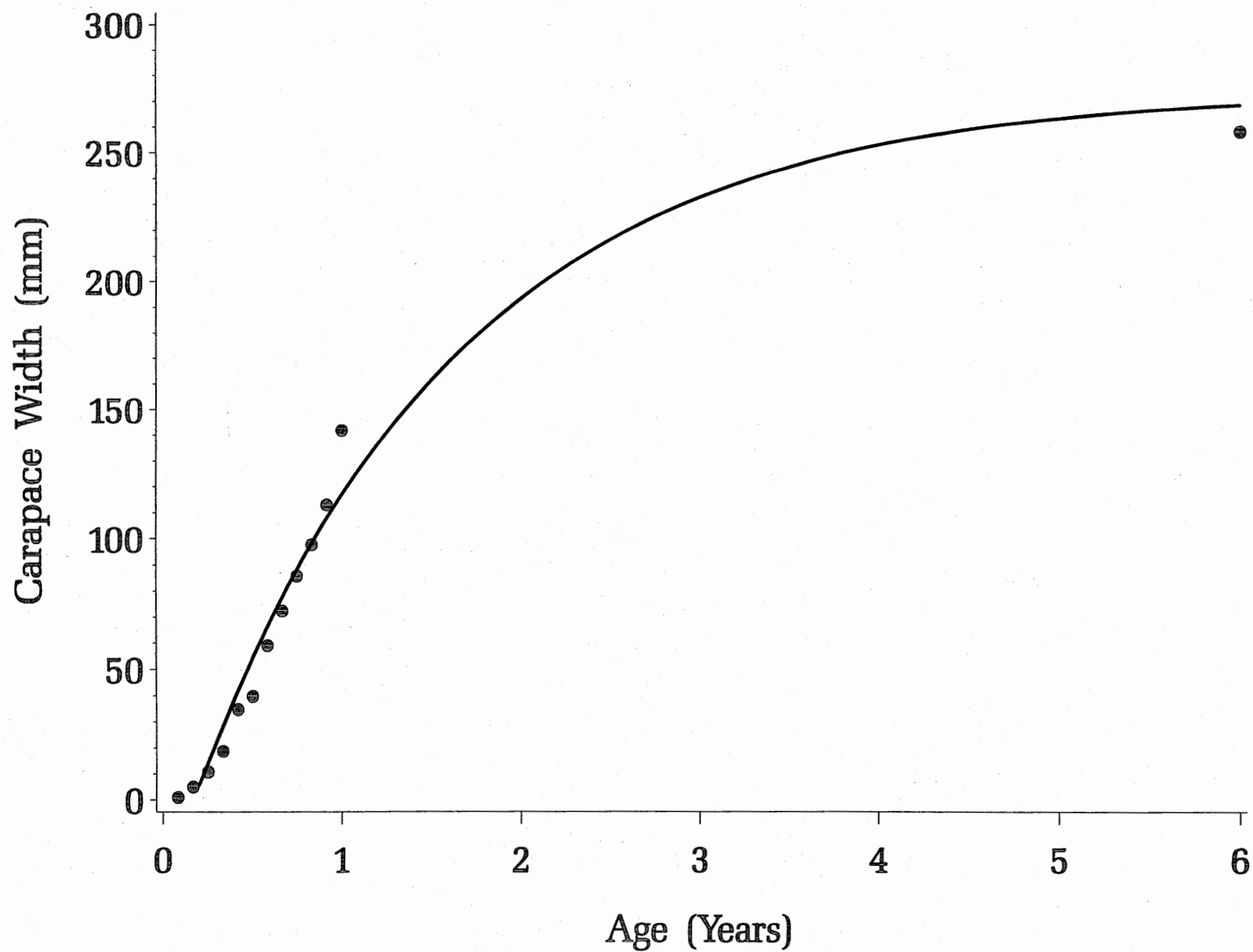
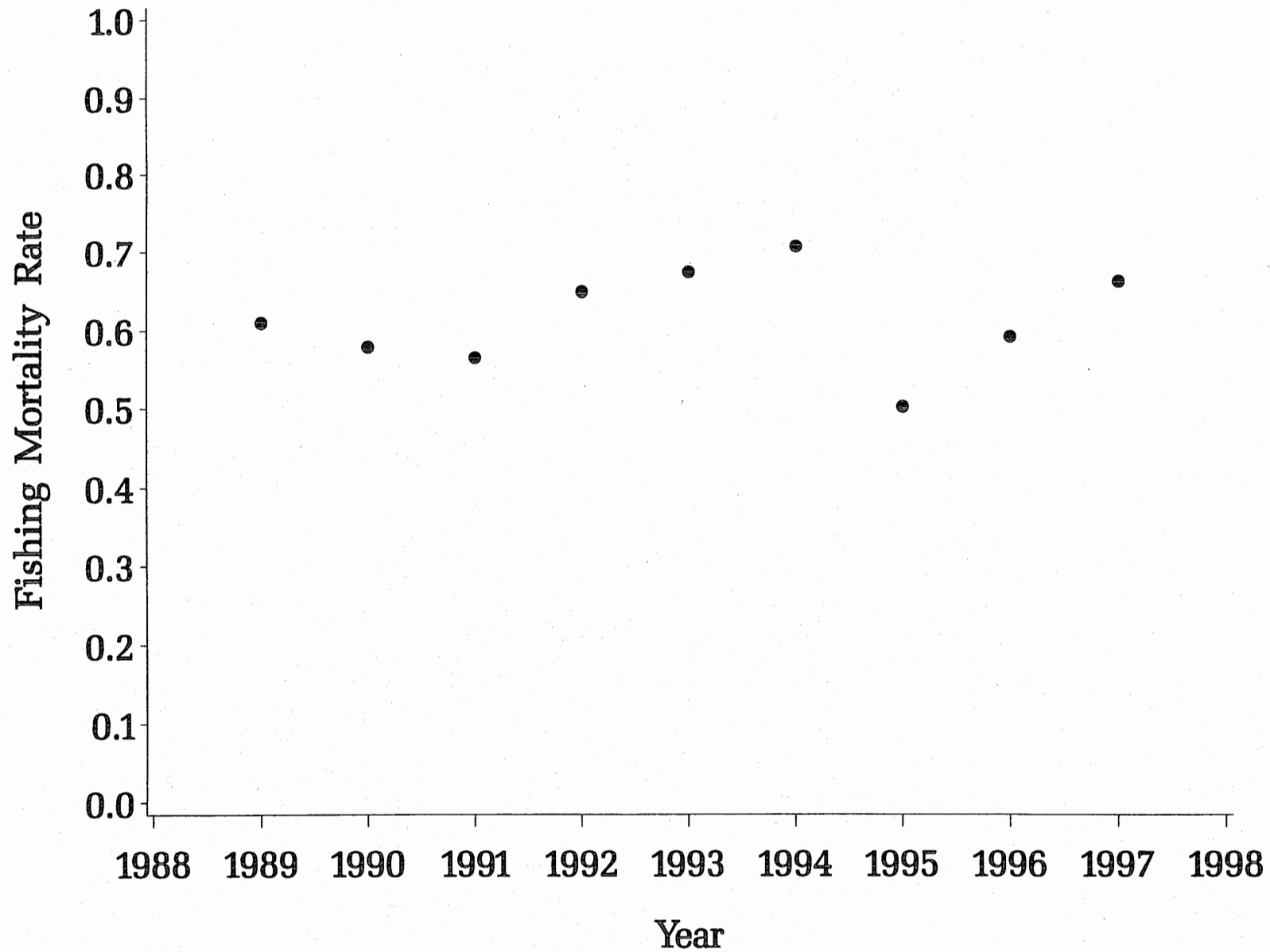


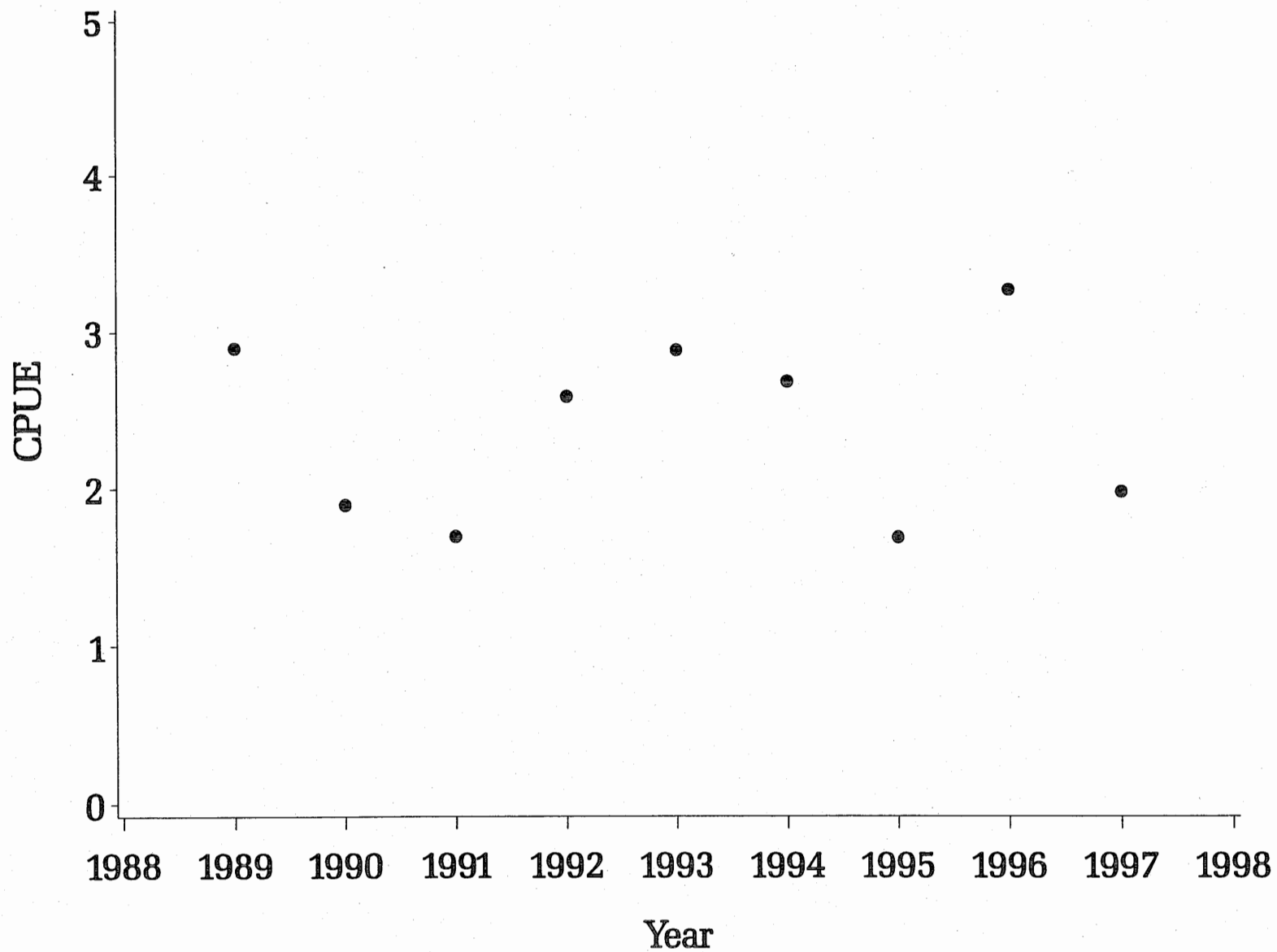
Figure 2. Von Bertalanffy growth curve for Gulf of Mexico blue crabs.

draft



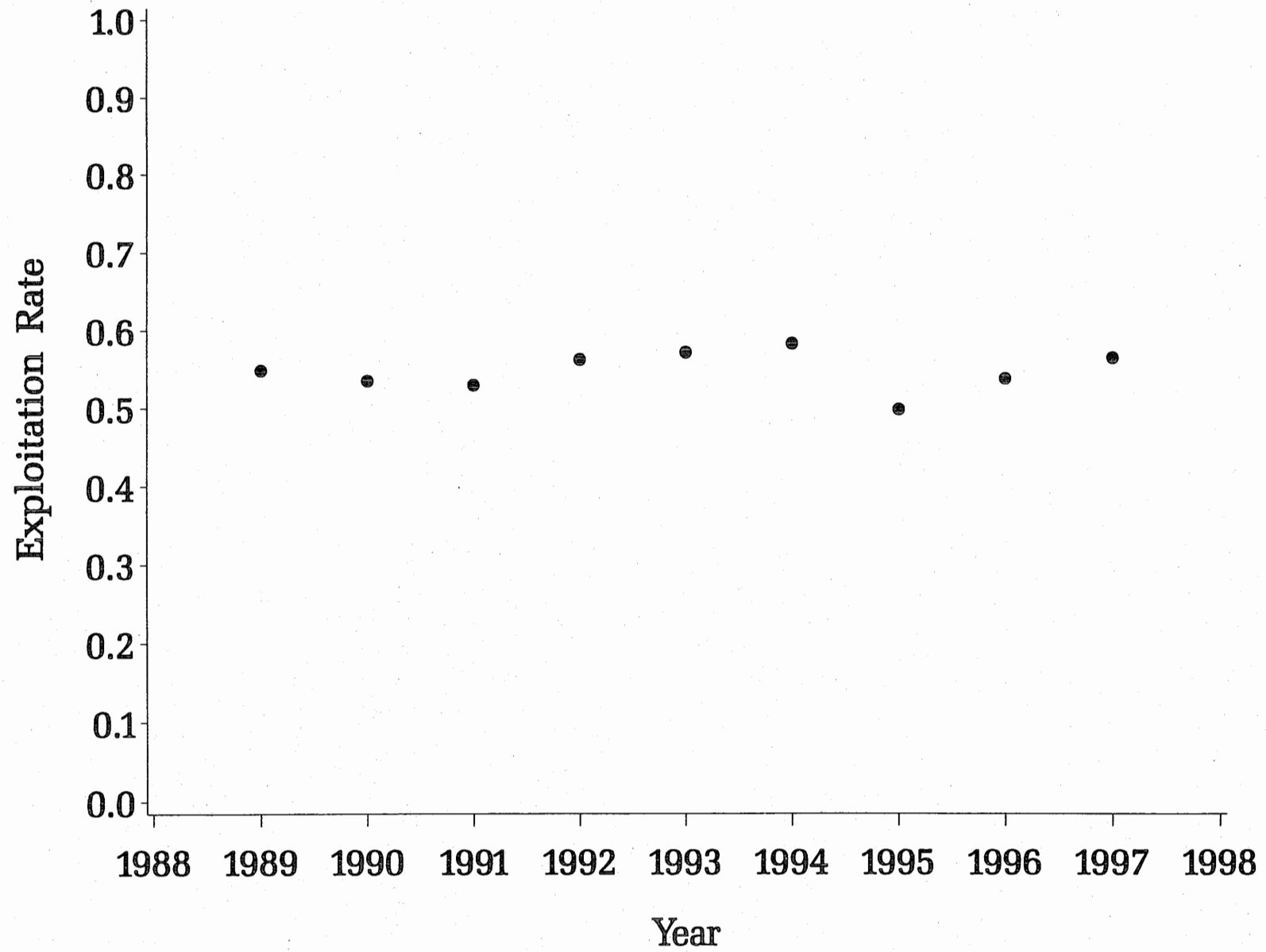
**Figure 3.** Scatter plot of estimated annual instantaneous fishing mortality rates for blue crabs of the Tampa Bay and Charlotte Harbor regions of Florida, 1989-1997.

draft



**Figure 4.** Scatter plot of estimates of relative abundance for blue crabs of the Tampa Bay and Charlotte Harbor regions of Florida, 1989-1997.

draft



**Figure 5.** Scatter plot of estimated exploitation rates for blue crabs of the Tampa Bay and Charlotte Harbor regions of Florida, 1989-1997.

draft

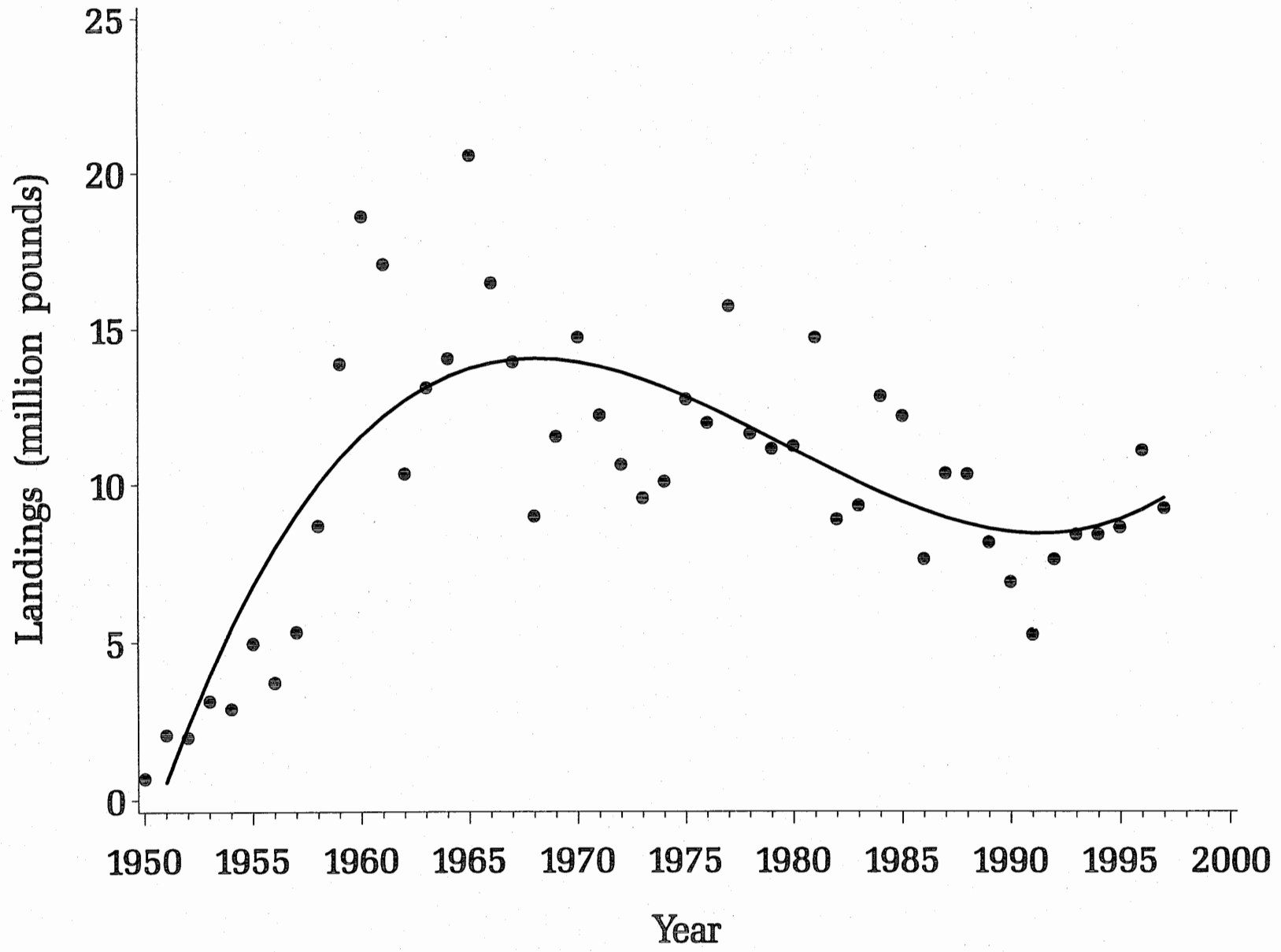


Figure 6. Scatter plot of Florida west coast blue crab landings, 1950-1997.



draft

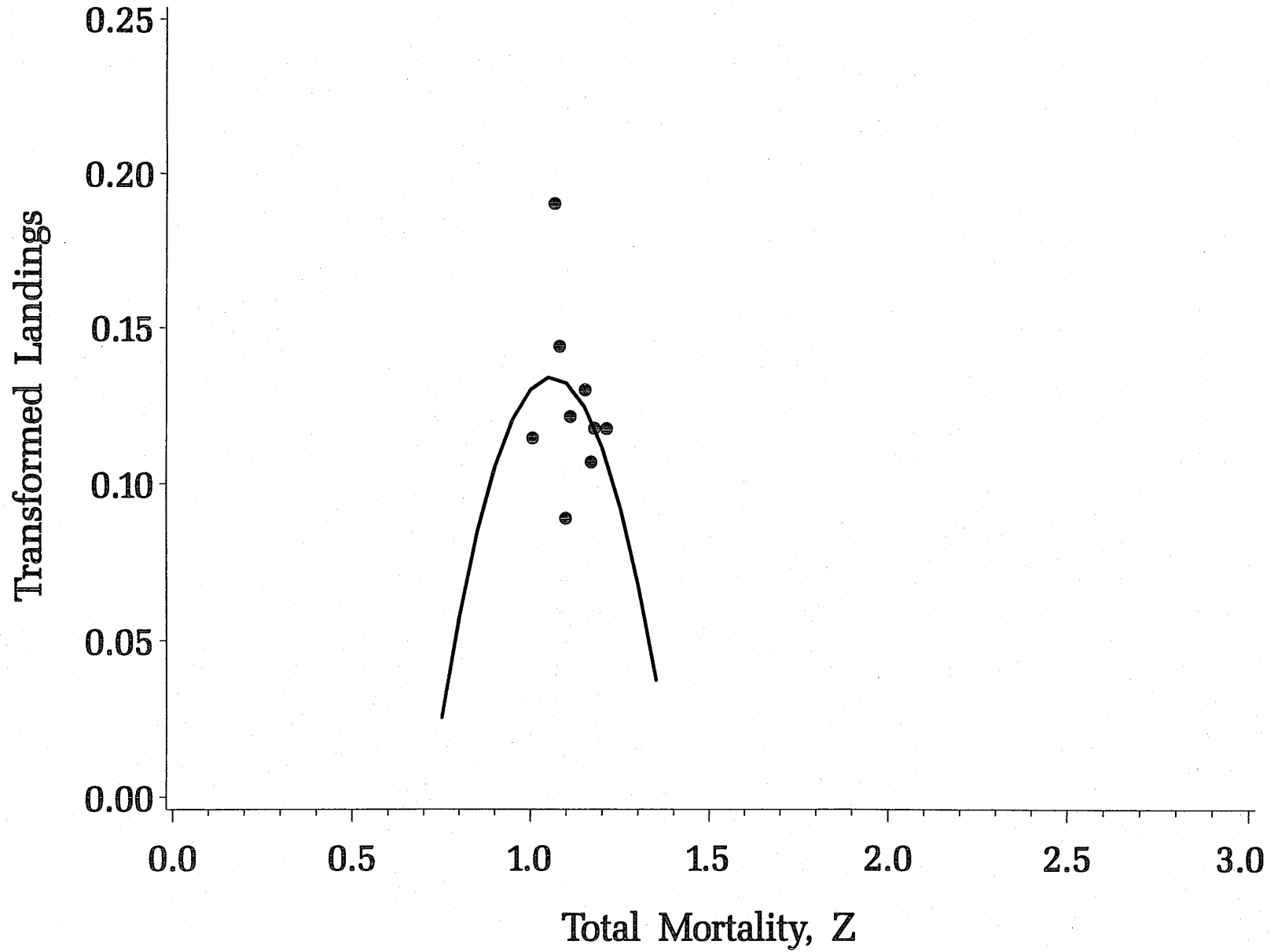
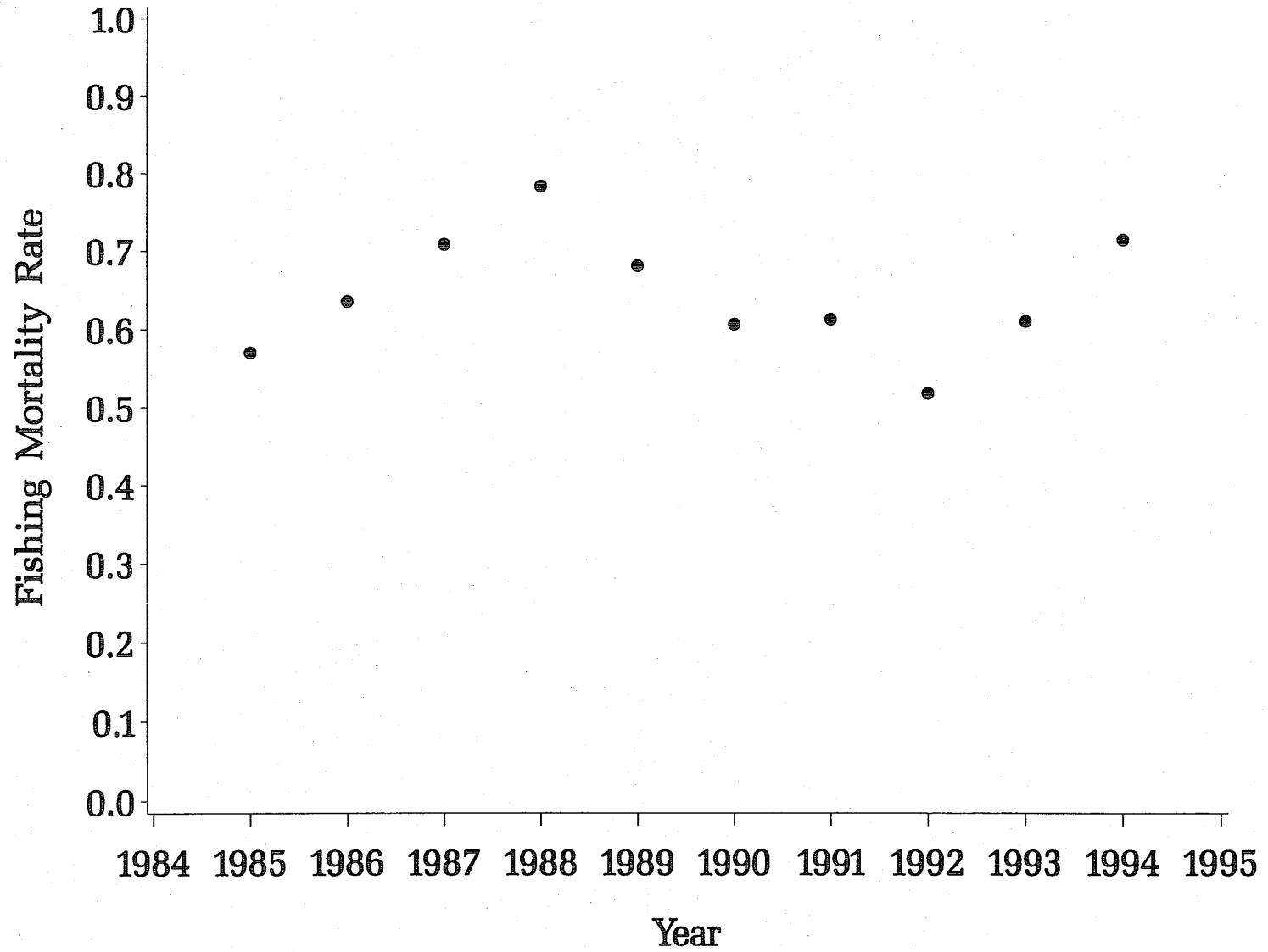


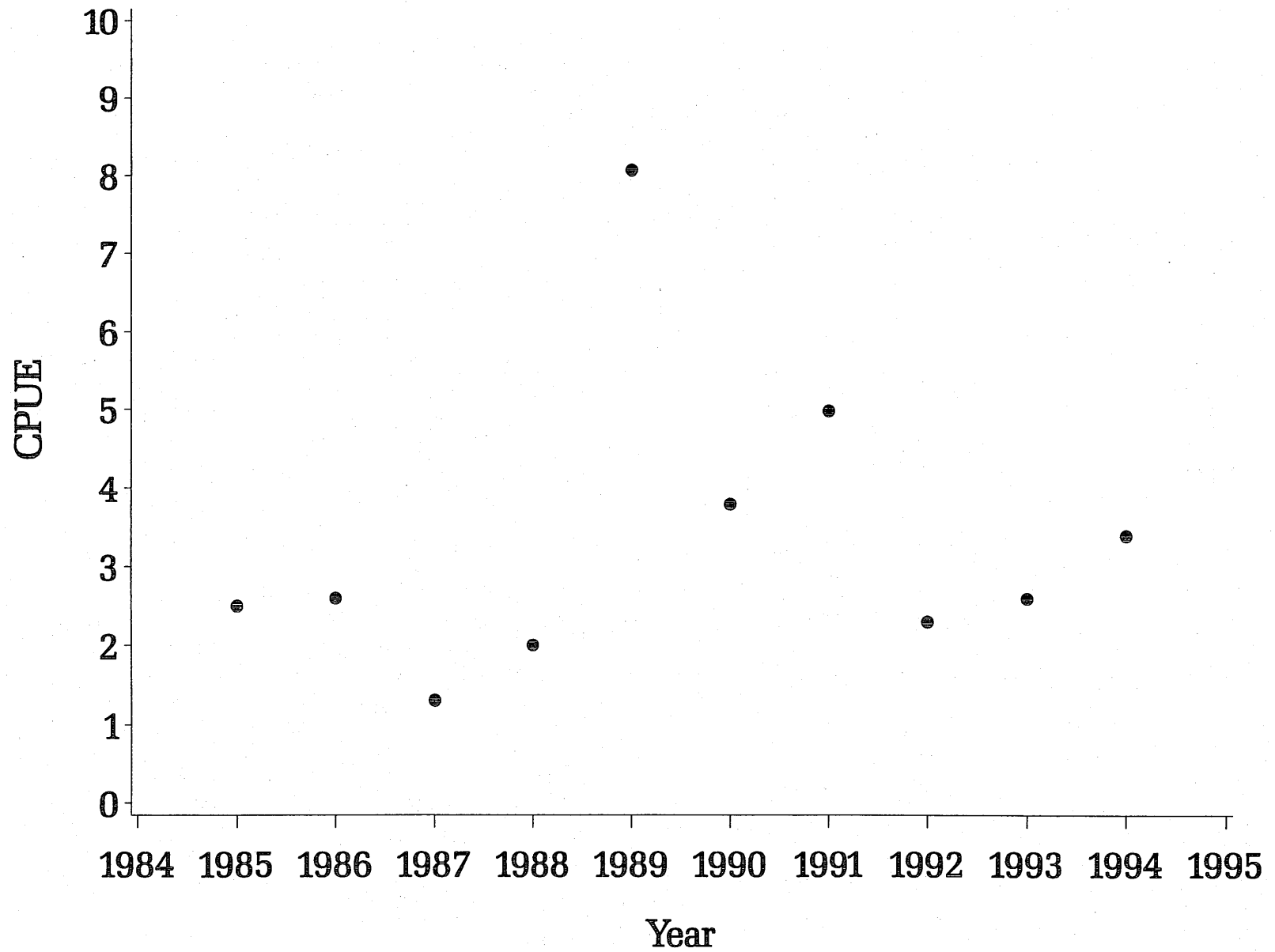
Figure 7. Scatter plot of transformed landings versus estimated total mortality rates used to estimate MSY for the Florida west coast blue crab fishery.

draft



**Figure 8.** Scatter plot of estimated annual instantaneous fishing mortality rates for Alabama blue crabs, 1985-1994.

draft



**Figure 9.** Scatter plot of estimates of relative abundance for Alabama blue crabs, 1985-1994.

draft

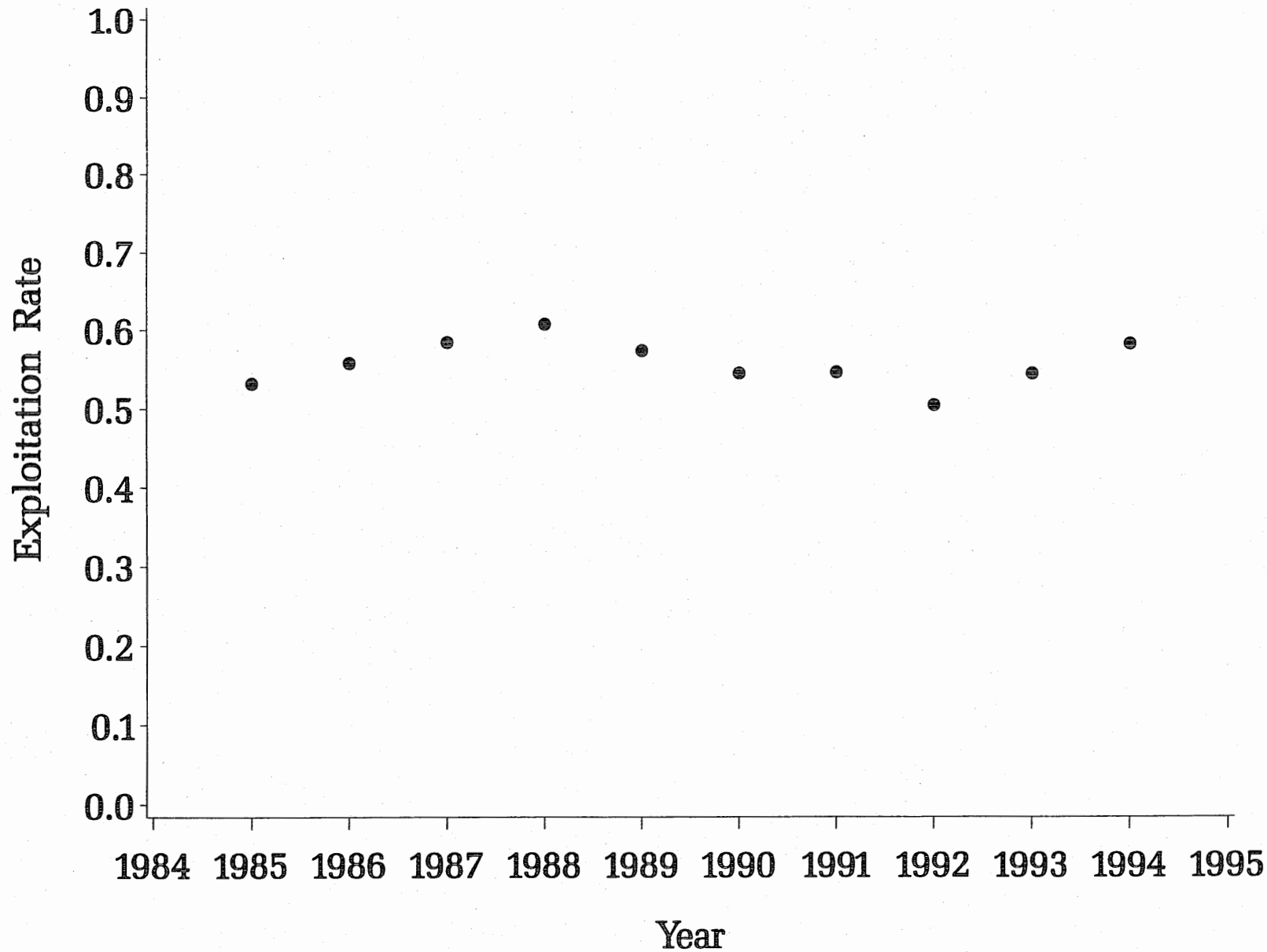


Figure 10. Scatter plot of estimated exploitation rates for Alabama blue crabs, 1985-1994.

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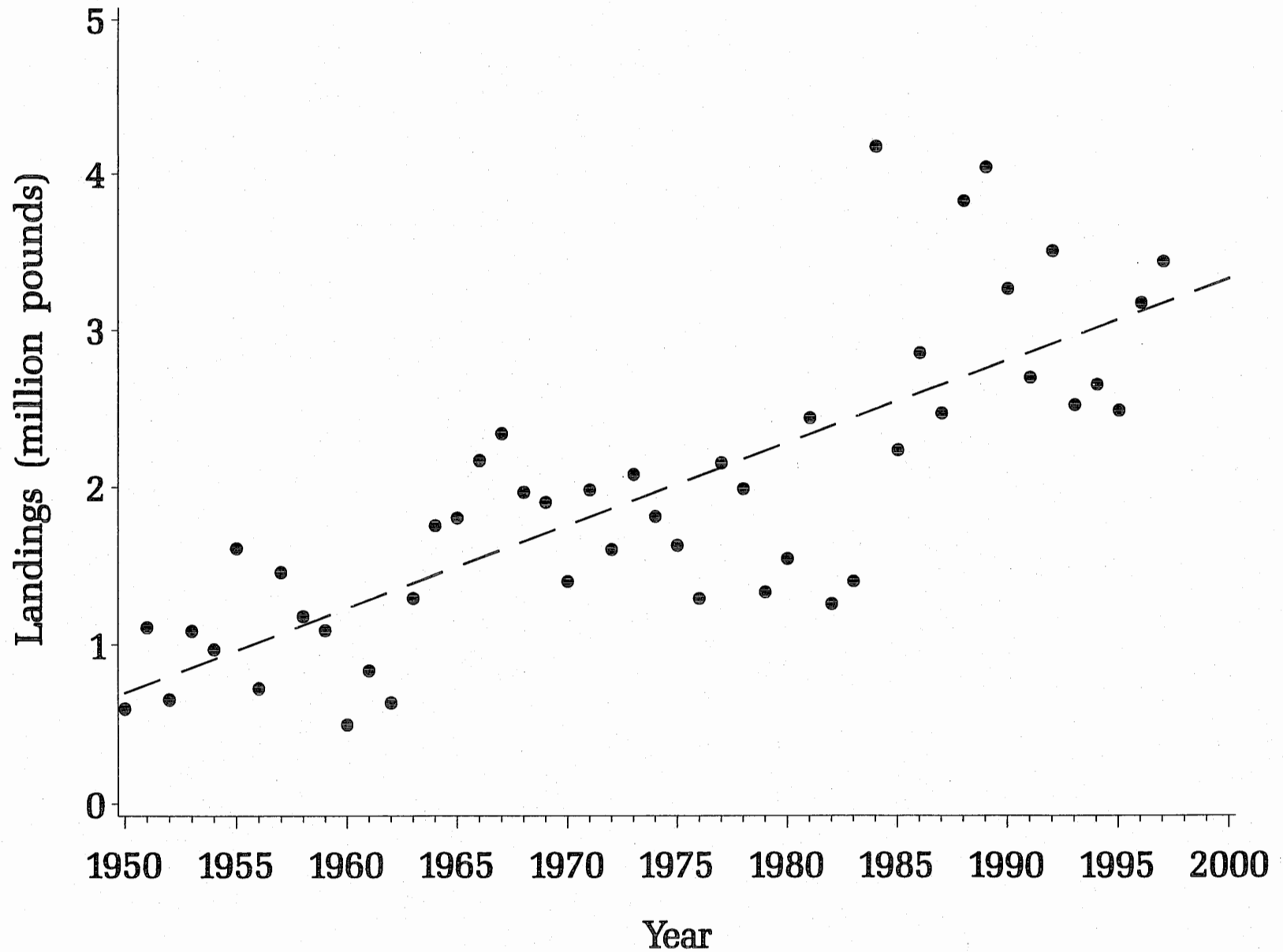
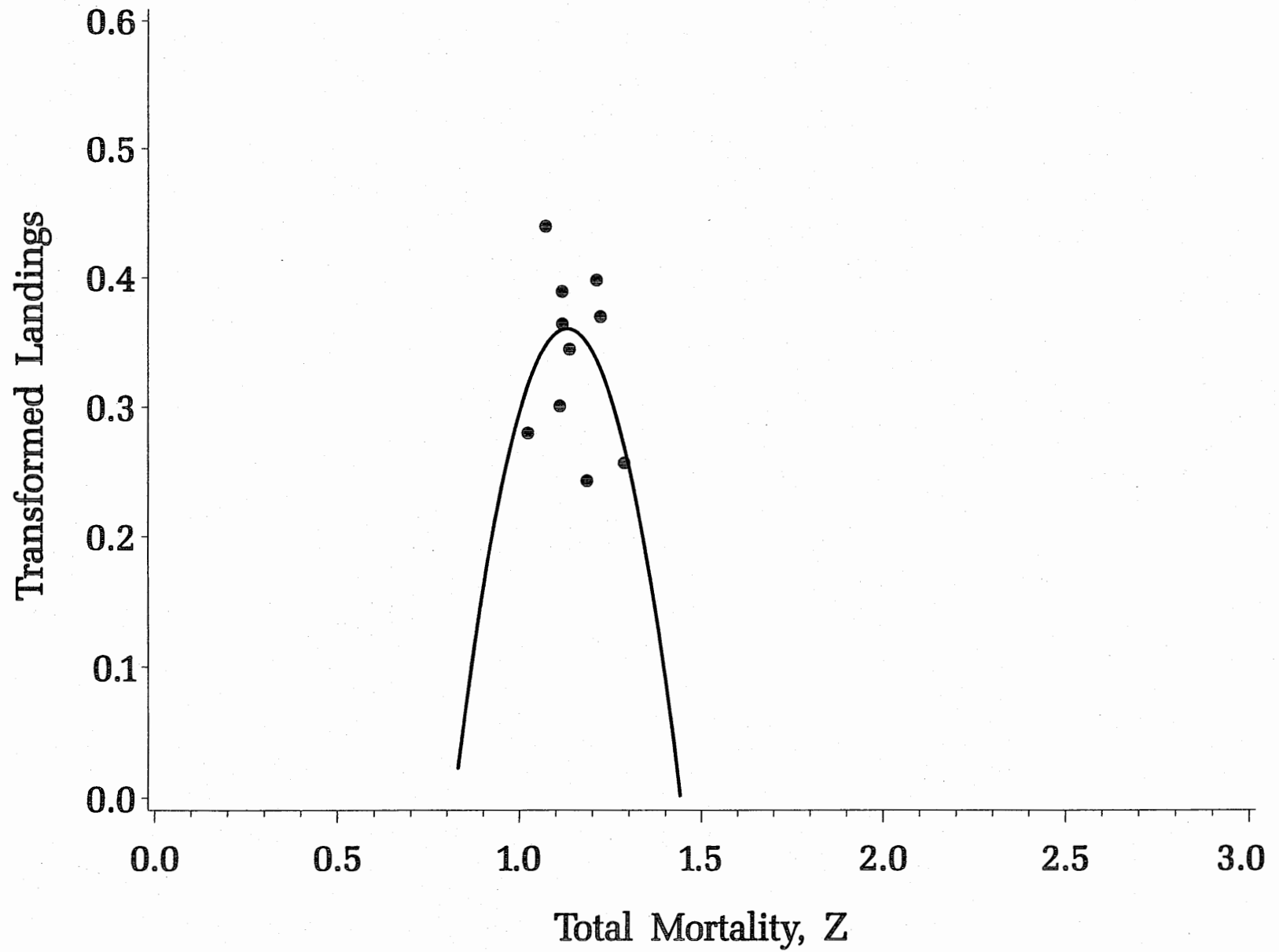


Figure 11. Scatter plot of Alabama blue crab landings, 1950-1997.

draft



**Figure 12.** Scatter plot of transformed landings versus estimated total mortality rates used to estimate MSY for the Alabama blue crab fishery, 1985-1994.

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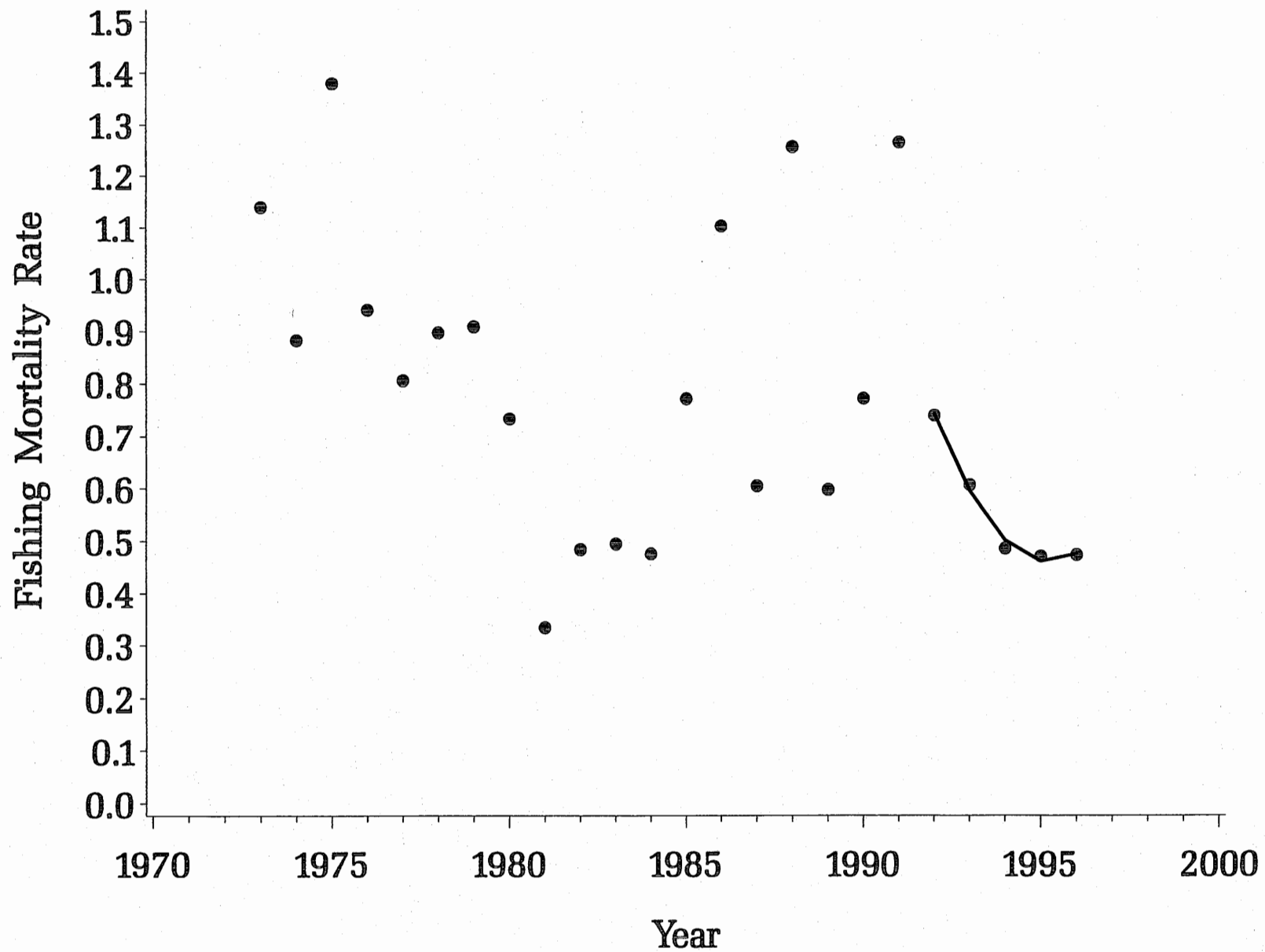


Figure 13. Scatter plot of estimated annual instantaneous fishing mortality rates for Mississippi blue crabs, 1973-1996.

draft

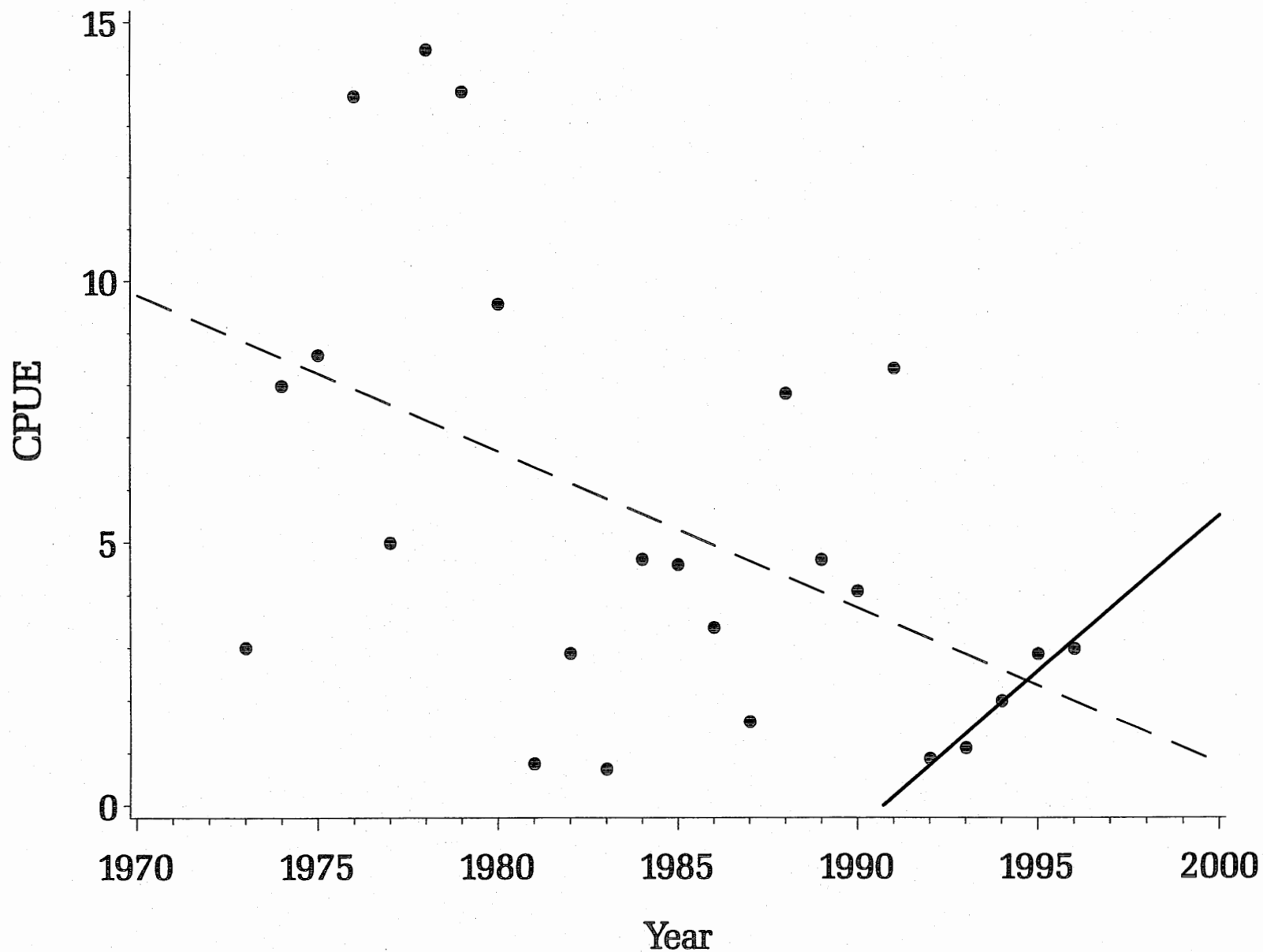


Figure 14. Scatter plot of estimates of relative abundance for Mississippi blue crabs, 1973-1996.



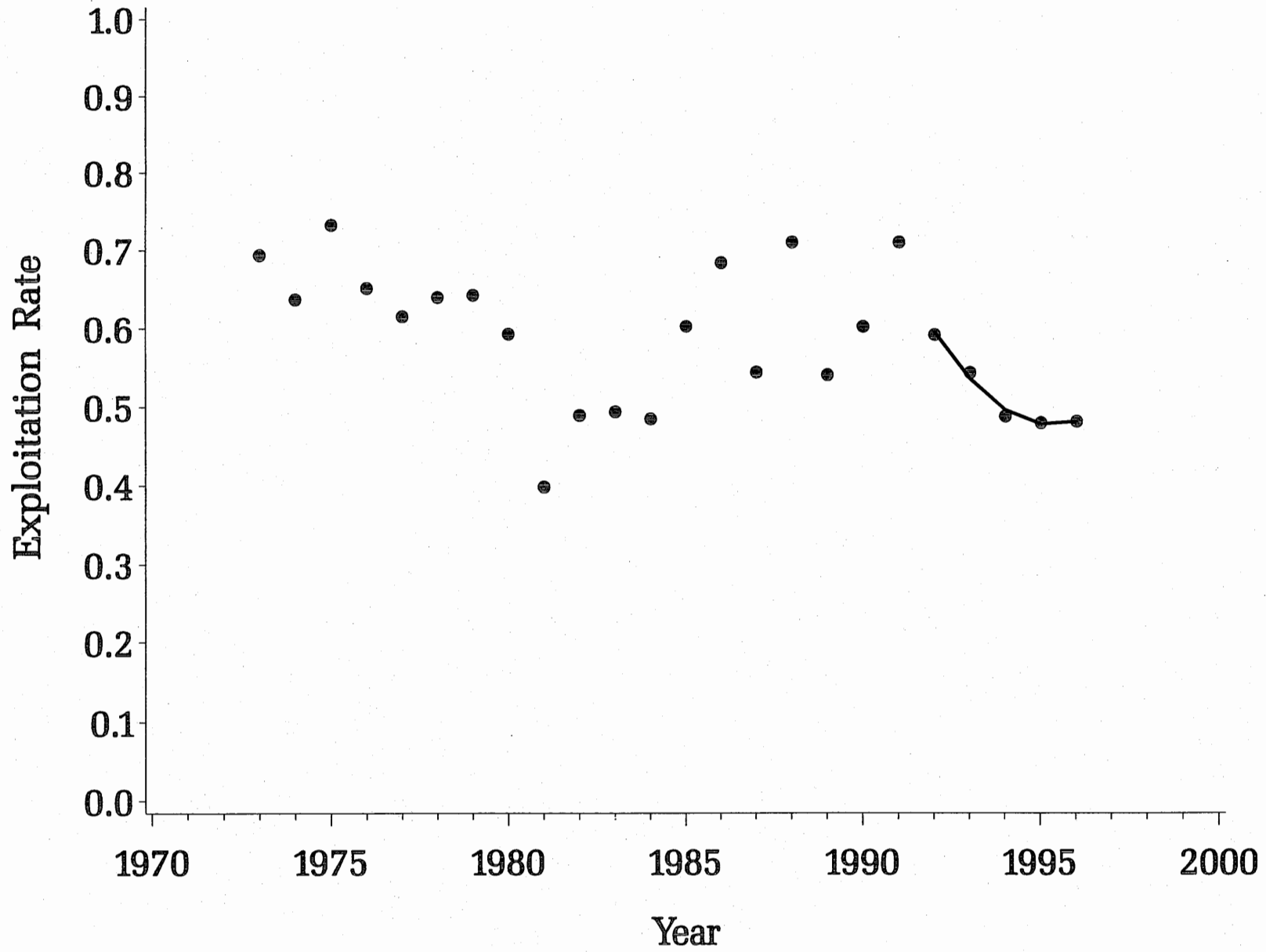


Figure 15. Scatter plot of estimated exploitation rates for Mississippi blue crabs, 1973-1996.

draft

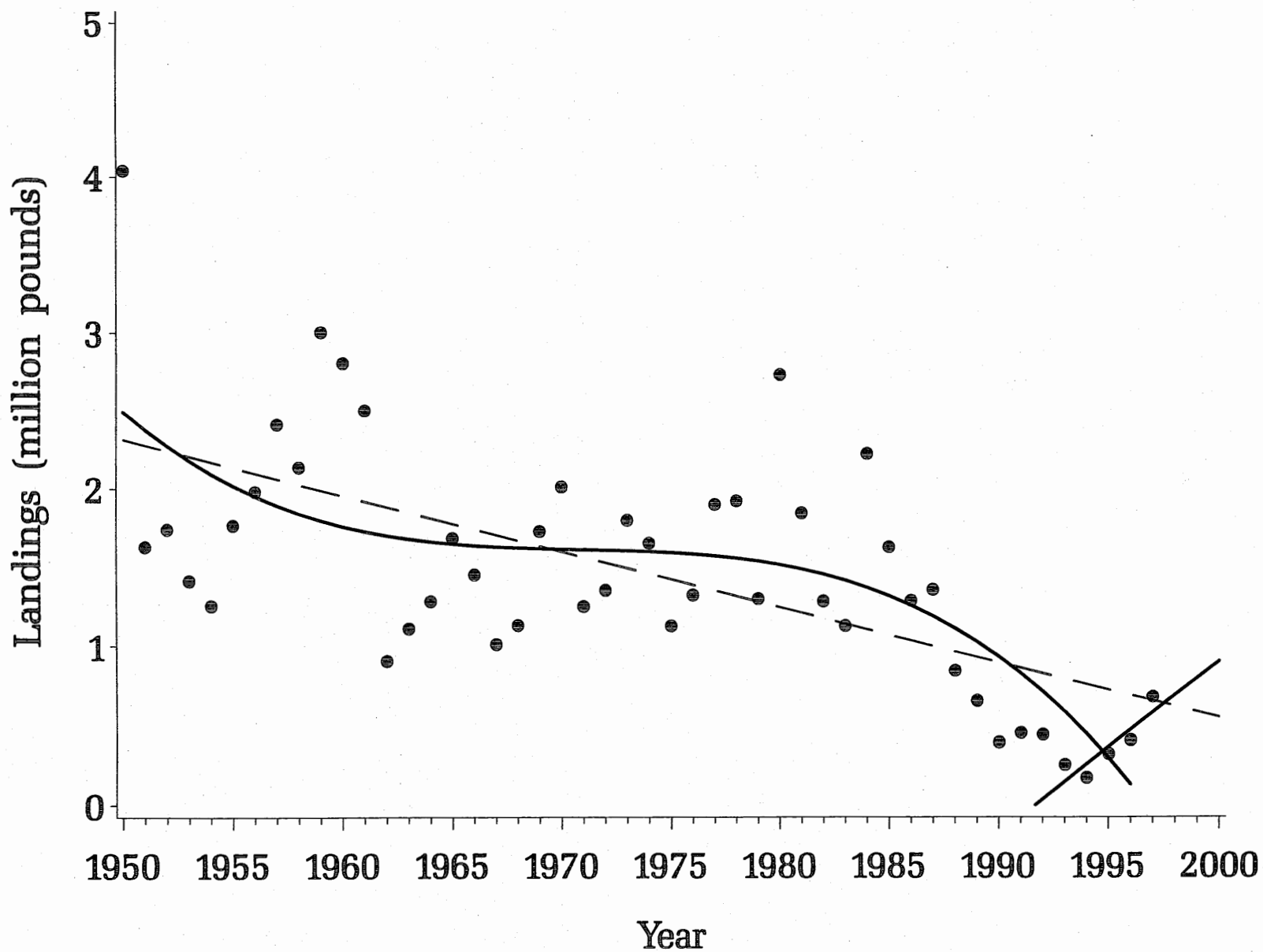
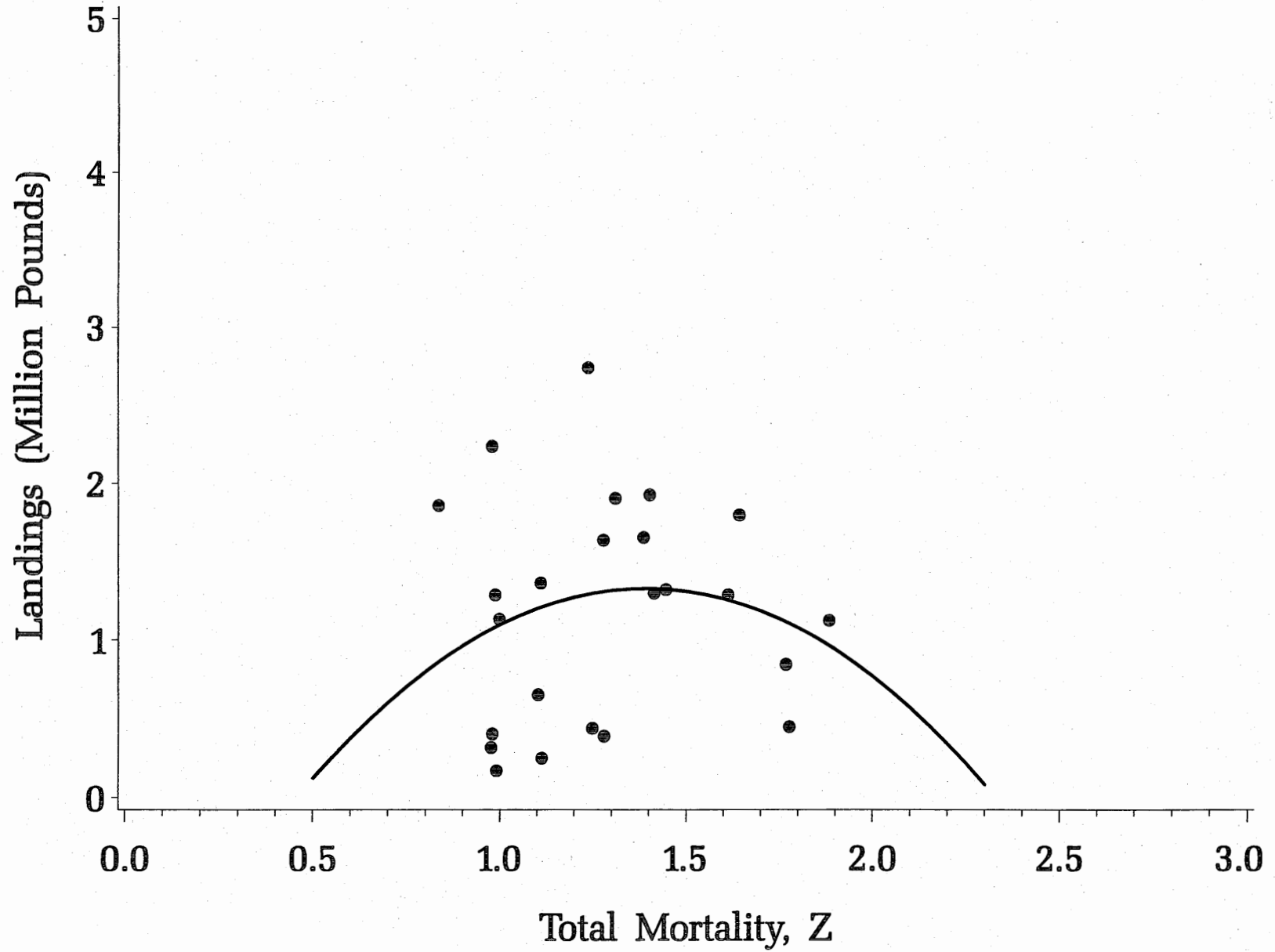


Figure 16. Scatter plot of Mississippi blue crab landings, 1950-1997.

dra



**Figure 17.** Scatter plot of landings versus estimated total mortality rates used to estimate MSY for the Mississippi blue crab fishery, 1973-1996.

draft

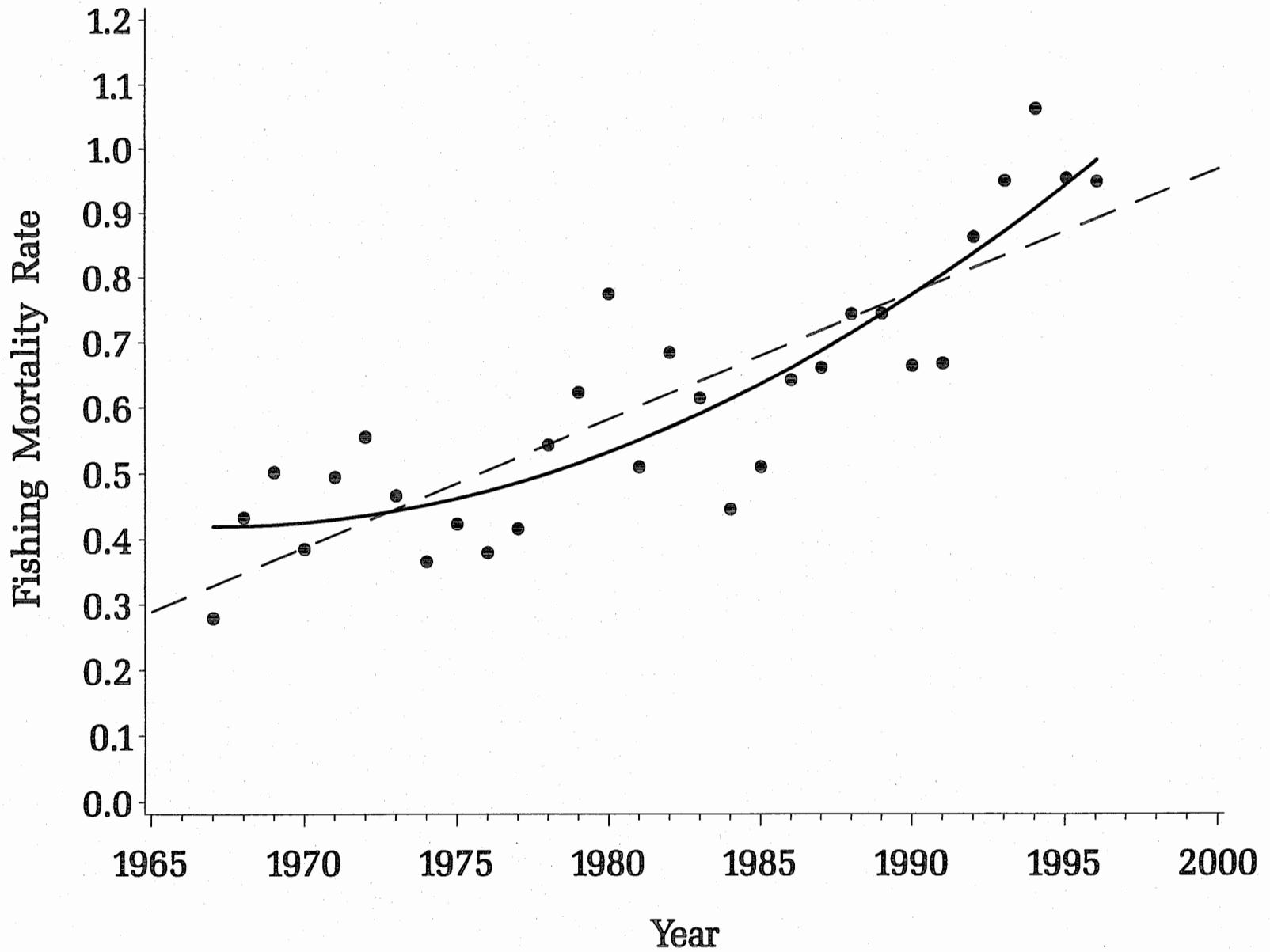


Figure 18. Scatter plot of estimated annual instantaneous fishing mortality rates for Louisiana blue crabs, 1967-1996.

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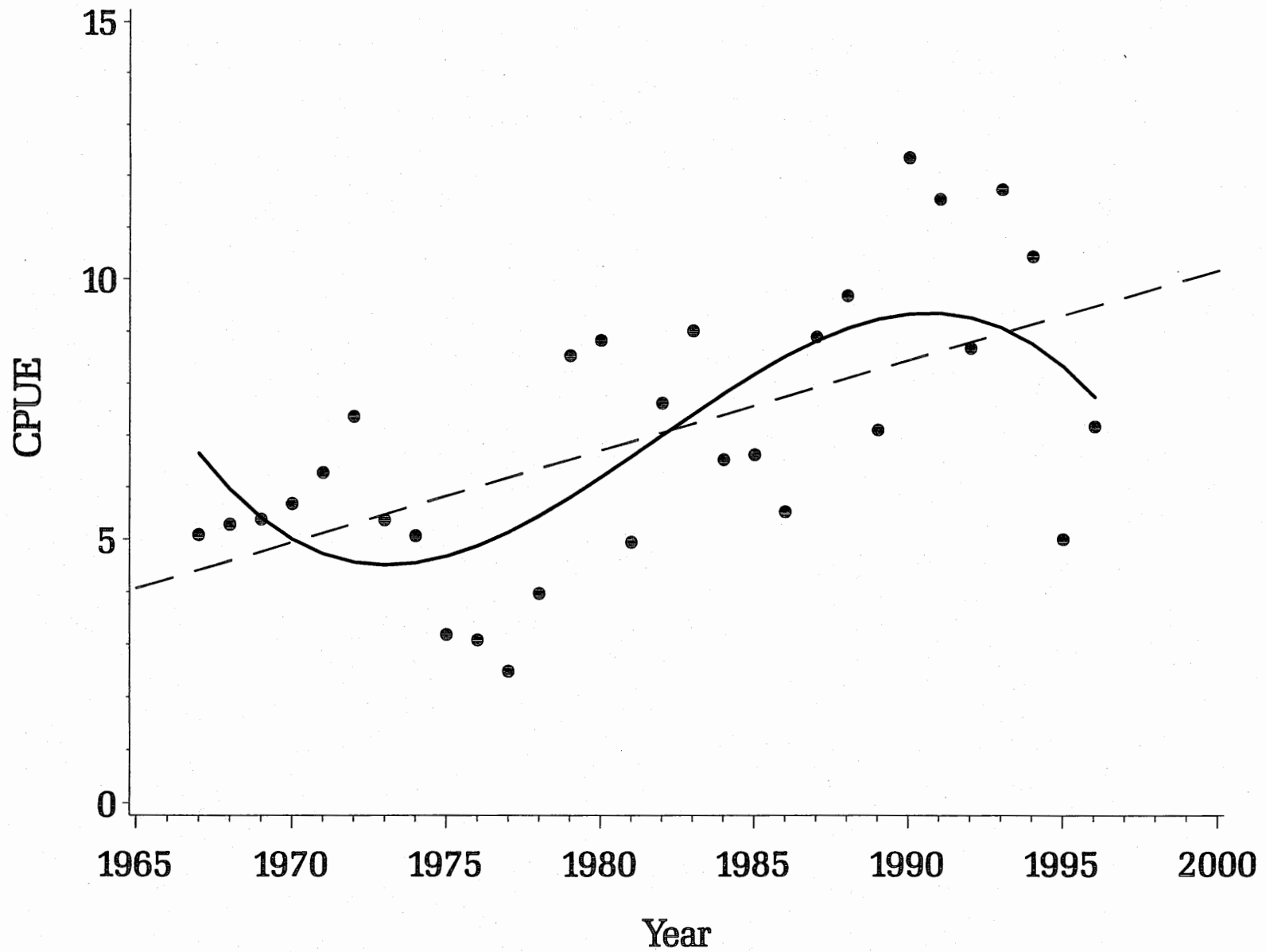


Figure 19. Scatter plot of estimates of relative abundance for Louisiana blue crabs, 1967-1996.

draft

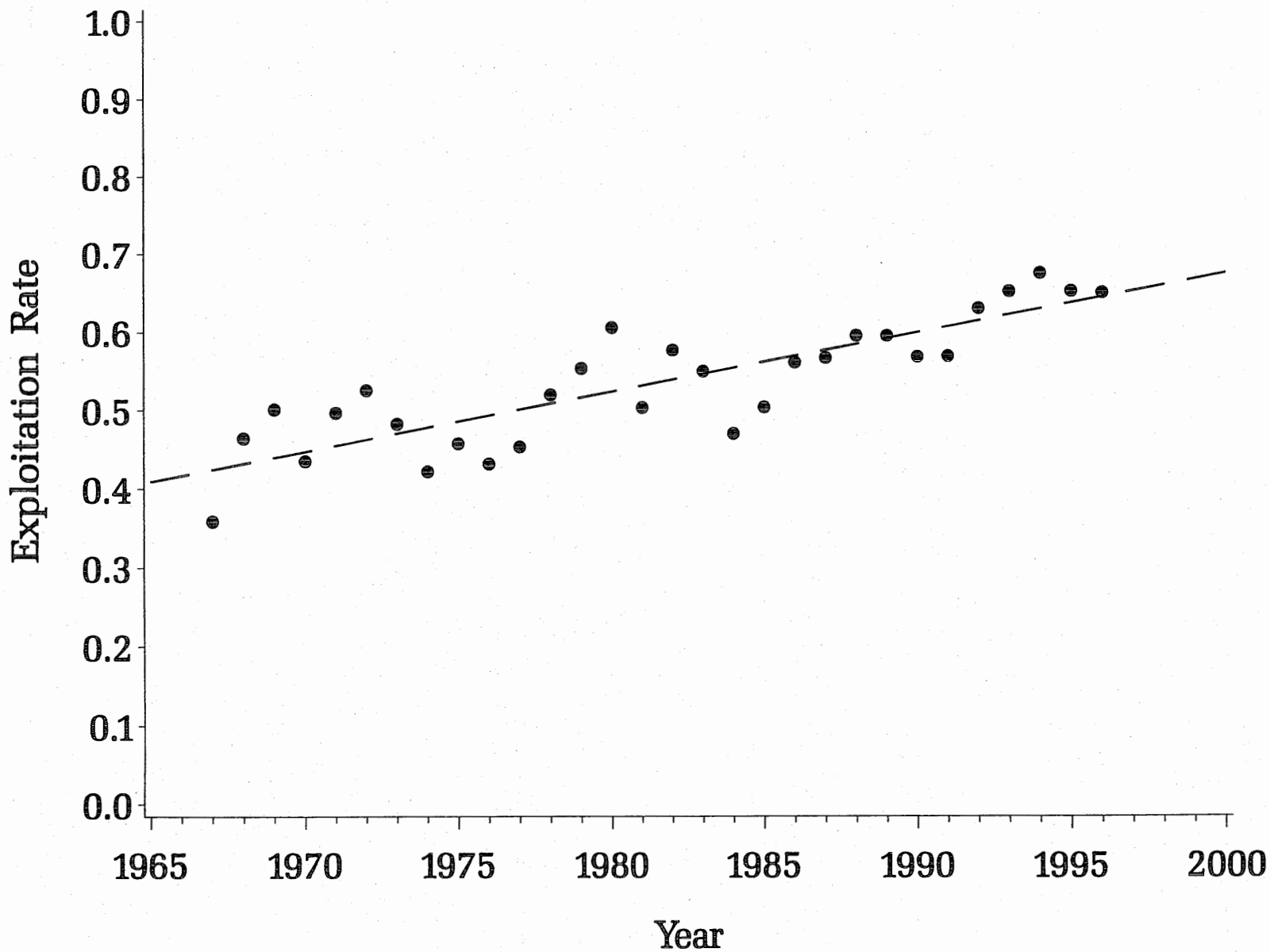


Figure 20. Scatter plot of estimated exploitation rates for Louisiana blue crabs, 1967-1996.

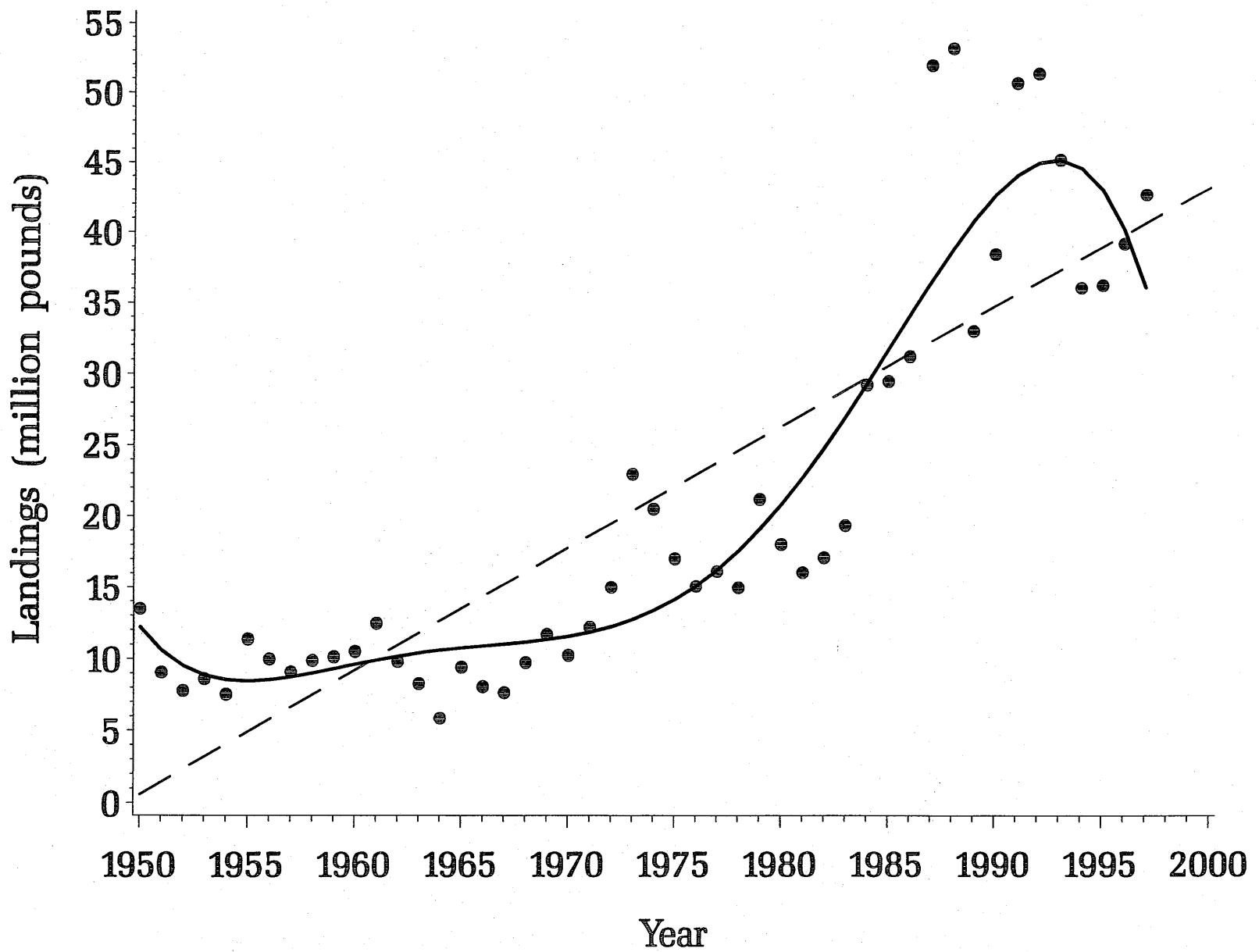
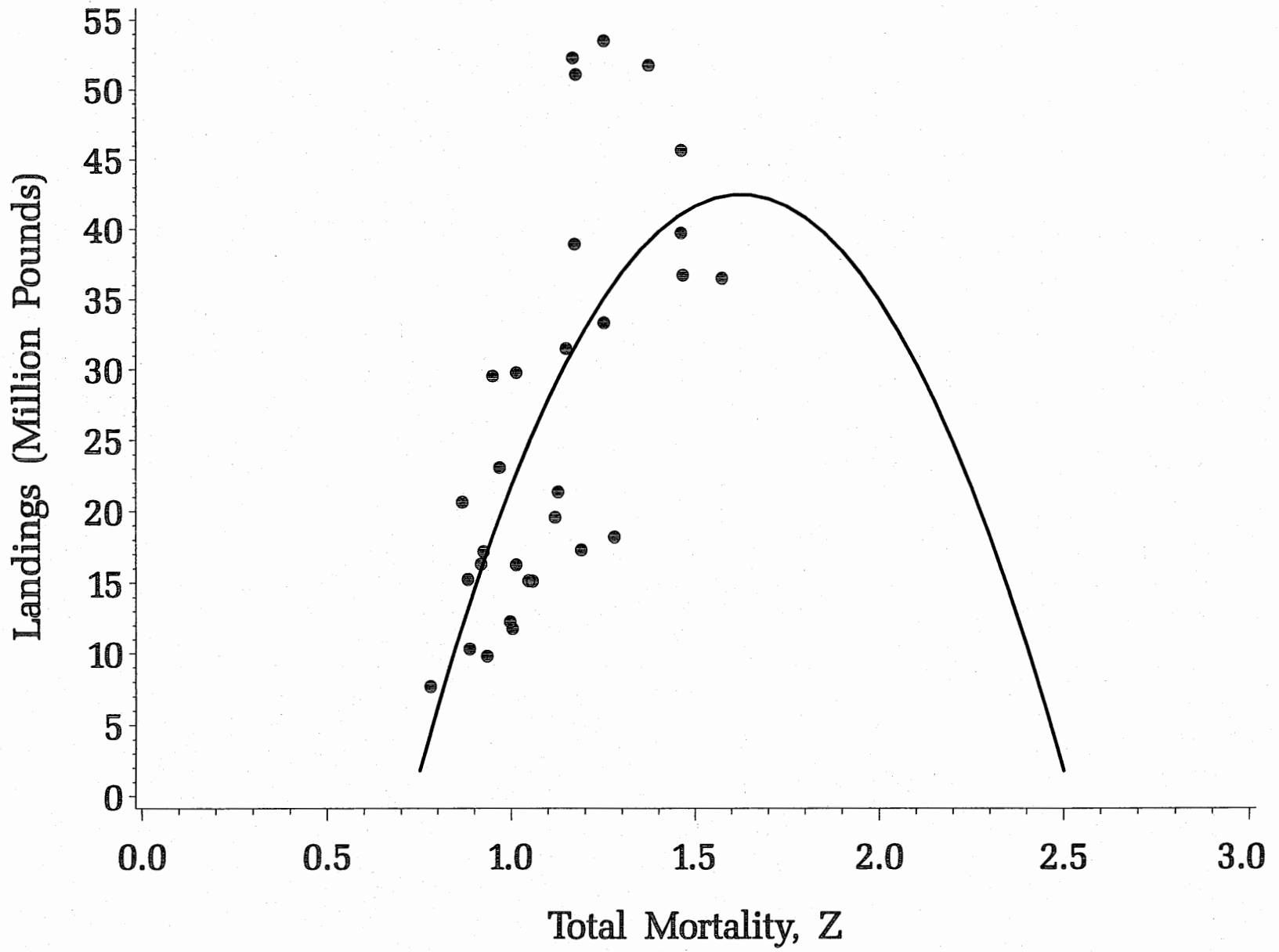


Figure 21. Scatter plot of Louisiana blue crab landings, 1950-1997.

draft



**Figure 22.** Scatter plot of landings versus estimated total mortality rates used to estimate MSY for the Louisiana blue crab fishery, 1967-1996.



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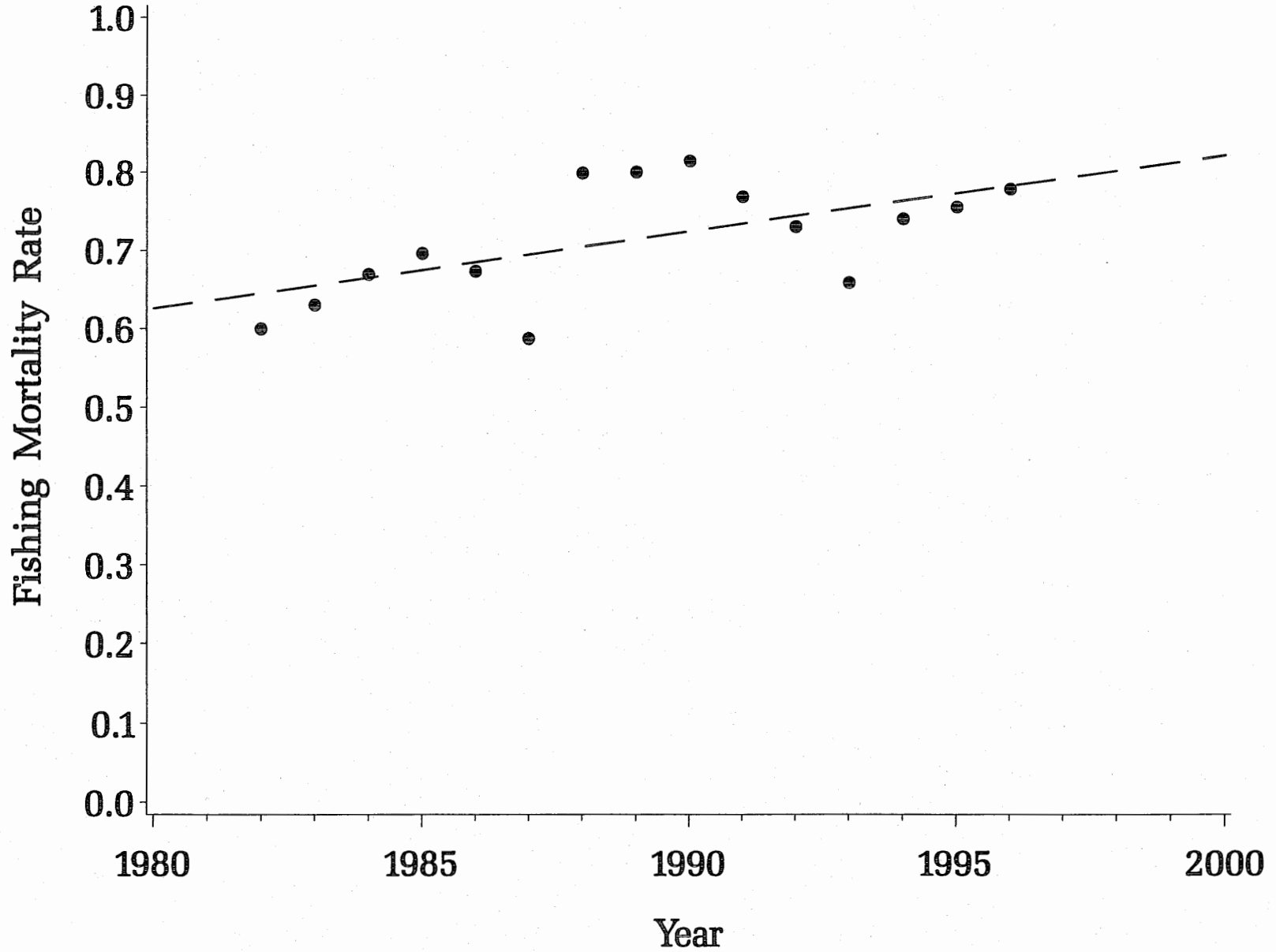


Figure 23. Scatter plot of estimated annual instantaneous fishing mortality rates for Texas blue crabs, 1982-1996.

draft

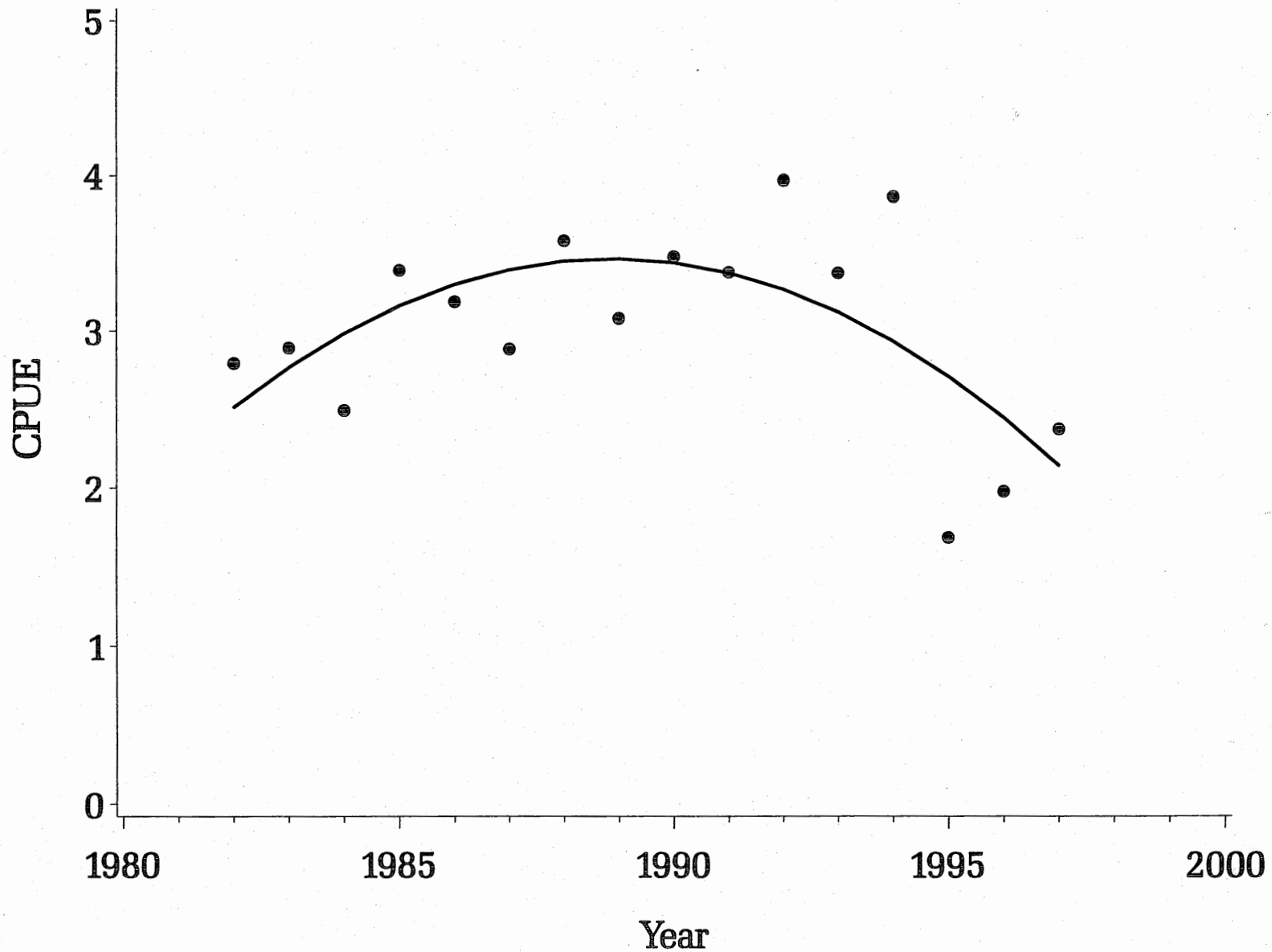


Figure 24. Scatter plot of estimates of relative abundance for Texas blue crabs, 1982-1997.

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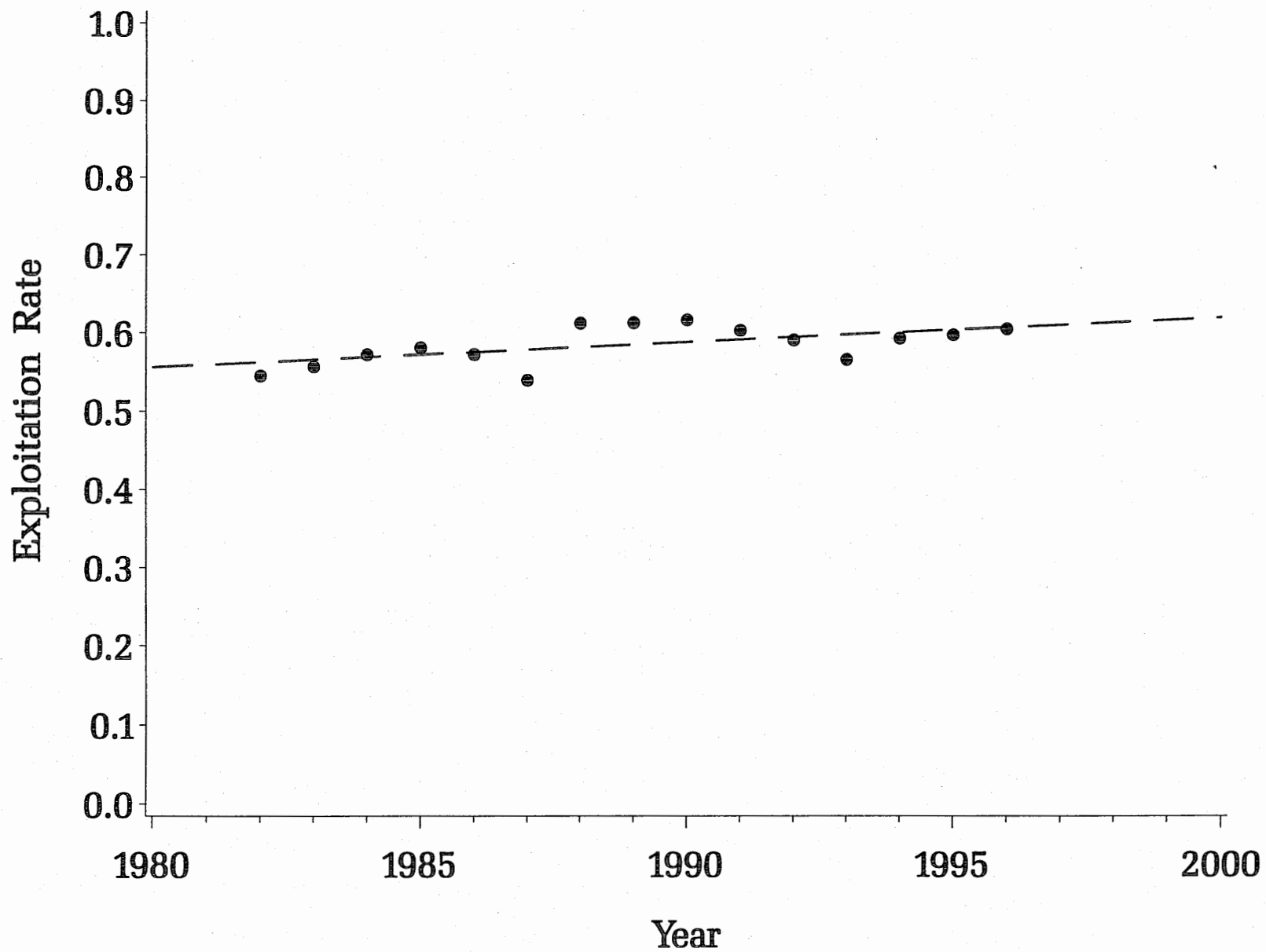


Figure 25. Scatter plot of estimated exploitation rates for Texas blue crabs, 1982-1996.

draft

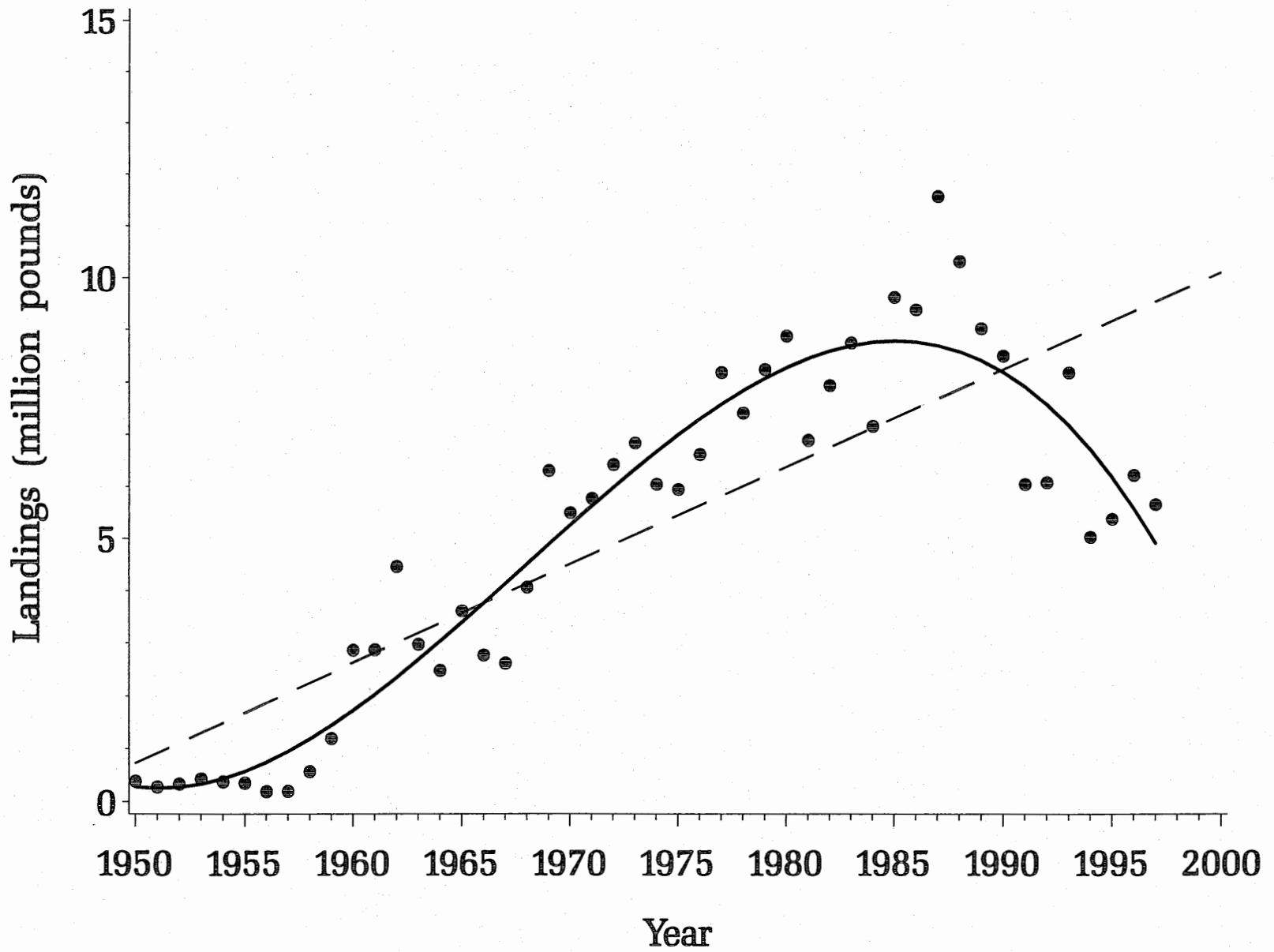
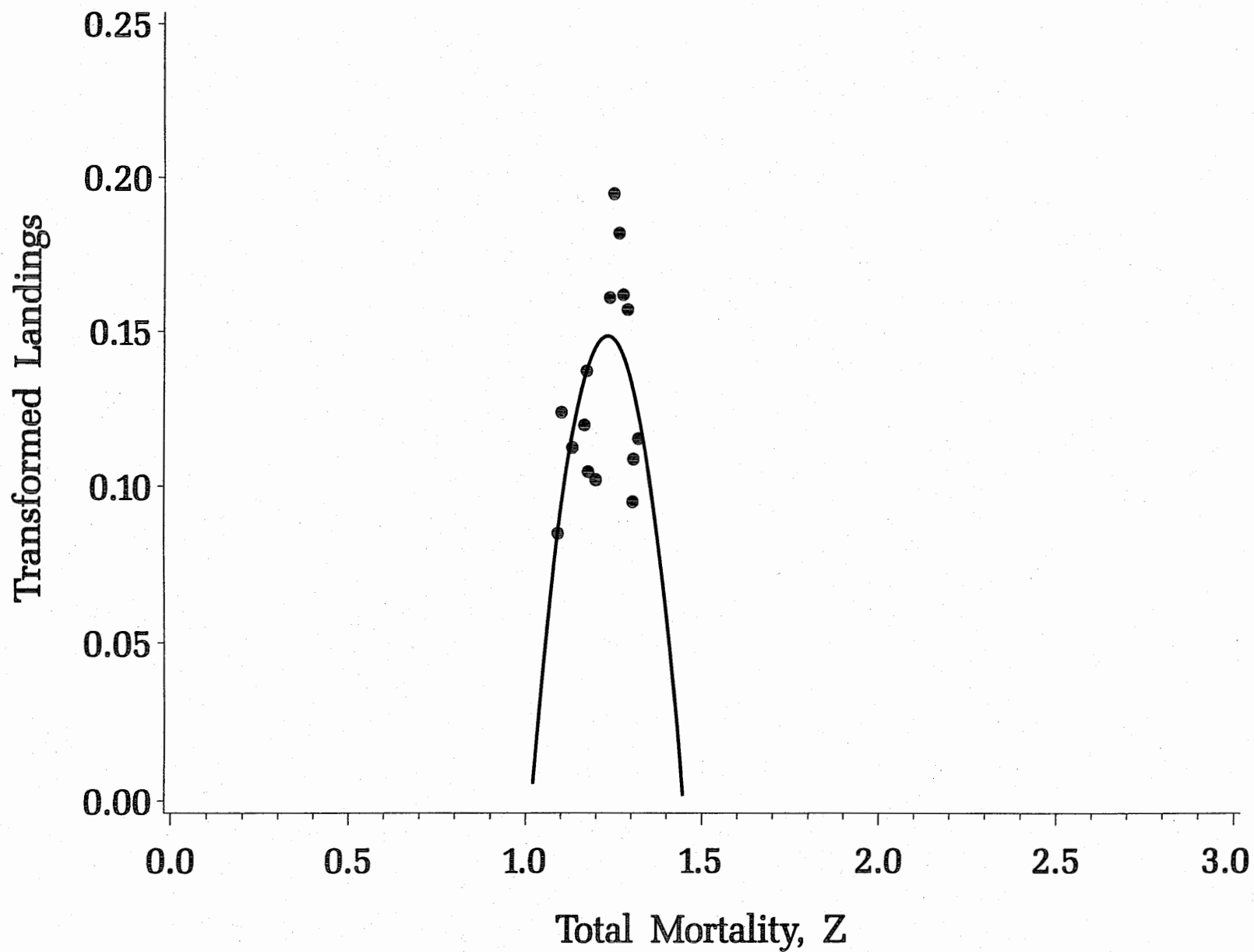


Figure 26. Scatter plot of Texas blue crab landings, 1950-1997.

dra



**Figure 27.** Scatter plot of landings versus estimated total mortality rates used to estimate MSY for the Texas blue crab fishery, 1982-1996.

**FIN SOCIAL/ECONOMIC WORK GROUP  
REPORT**

FIN Social/Economic Work Group  
Meeting summary  
July 27, 1999  
Miami, Florida

The meeting was called to order at 9:10 a.m. and the following people were present:

Tony Lamberte, GMFMC, Tampa, FL  
Steve Holiman, NMFS, Tampa, FL  
Marina Guedes, ASMFC, Washington DC  
Dave Donaldson, GSMFC, Ocean Springs, MS

#### Purpose of the Meeting

D. Donaldson stated that the main purpose of the meeting was to review the current social and economic activities under FIN and develop a section for the FIN Quality Assurance/Quality Control (QA/QC) document regarding mail surveys. It was noted that as part of the review of activities, the group needed to be briefed on the pilot work that the Atlantic Coastal Cooperative Statistics Program (ACCSP) is undertaking regarding collection of social and economic data.

#### Review of Current activities

For the recreational sector, D. Donaldson reported that, through the Marine Recreational Fisheries Statistics Survey (MRFSS), state personnel are collecting social and economic data via an economic add-on. This add-on is part of NMFS initiative to periodically collect social and economic throughout the United States. Every three years, social and economic data are collected in the Southeast Region of the United States. For this period, the questionnaire consists of approximately 10 questions which are administered in the field. The last question asks if the person would be willing to participate in a follow-up telephone survey. The states are collecting the field data and the NMFS contractor is conducting the follow-up phone survey. Because this add-on survey asked more sensitive questions, the initial refusal rates appear to be higher than the last time an economic add-on was conducted in the Southeast. There was concern by the group that the FIN was not more involved in the development of the economic add-on for the MRFSS. It was understood that the funds for this activity were made available fairly quickly and there needed to be a fast turn around to implement this activity, but the group believed that there needs to be a more structured process for the pre-, during-, and post-survey activities. **It was recommended that the FIN, via the Social/Economic Work Group, become more involved in the development of social and economic data collection and management activities of the MRFSS.** There are two components involved: data collection (which has been established as every 3 years in the Southeast) as well as data analysis. The group discussed the perception of the utility of social and economic data. It was noted there is a perception that the data are not analyzed (and thus not used) on a regular basis. There is a need to develop a process for integrating the social and economic data into the management of the resources. Currently, these type of data are not regularly used in management decisions. There needs to be a systematic review of the social and economic data that are collected by the economic add-on similar to review of the catch and effort information collected by the base MRFSS. **It was recommended that when an economic add-on is being conducted in the Southeast, additional time be set aside at wave meetings to review the social and economic**

**data.** Participation at these meetings should be the FIN Social/Economic Work Group, data collection personnel, and MRFSS staff. It was pointed out that there may need to be separate meetings apart from the wave meetings but the group believed that holding these meeting in conjunction with the wave meetings was a good starting point.

The group reviewed data collection activities regarding the for-hire sector. D. Donaldson stated that social and economic data are currently being collected regarding charter boats, via the economic add-on. Information being collected from head boats will be evaluated during the South Carolina study and the group believed that it should wait for the results of this study before making any recommendations. It was noted that the activities for the charter and head boats collects data from the anglers and does not address the operational side of the for-hire sector. M. Guedes noted that there will be some information collected regarding the for-hire sector during the ACCSP pilot study regarding social and economic data. The group believed that it should await the outcome of that study as well before making any recommendations.

The group then discussed the commercial data collection activities. D. Donaldson stated that the trip ticket system is the backbone of the ComFIN. It allows for the identification of the universe of commercial fishery participants and from that, enables someone to design a sampling method for collecting other needed data such as social and economic data. Currently, Louisiana and Florida have operating trip ticket programs and Texas, Mississippi and Alabama are in the process of implementing systems in their state. There was a discussion regarding who would be collecting the information in the field. D. Donaldson noted that although the trip ticket system is the backbone of the ComFIN, it is equally important to continue to have a strong port sampler system. The port samplers will be responsible for collecting a variety of data in the field including the social and economic information. T. Lamberte suggested that it might be possible to have the dealers actually collect the social and economic data. The group agreed that it might be a long-term possibility, however, in the short-term, the information would probably be collected by the port agents. M. Guedes stated that the ACCSP will be conducting a commercial harvesters pilot study. The pilot study is designed to look at three specific areas. One is to identify and address potential problems with the mechanics of implementing the system. These include all data gathering, entry and storage activities as well as the ability to link the data to all other ACCSP data and to U.S. census data. The second is to carry out a field test of the survey instrument across the different cultural and socioeconomic contexts in which the data gathering system must eventually be implemented. Field testing questions and instruments is standard procedure in preparing for any survey research. The third area is to verify the economic models. Initial data gathering in two specific fisheries, summer flounder and blue crab, will be carried out and the data used for test runs of several standard economic models. The group decided that it would be beneficial to await the outcome of the ACCSP pilot study before proceeding with development of commercial data collection for social and economic data for FIN. The Social/Economic Work Group should be involved in the evaluation of the pilot study. There was a discussion regarding the need for both the ACCSP and FIN to use the same methods (mail survey vs. phone survey vs. personal interviews) for collecting social and economic data. M. Guedes stated that, in order to be compatible, both programs need to use the same methods since utilizing different methods can result in very different answers to similar questions. S. Holiman noted that as long as the same sampling protocol was being used and the same questions were asked, thus collecting the same data elements, the method of collection should not really matter. Although the data will not be identical, it will still be compatible. The group continued to discuss this issue and no consensus was reached. It was suggested that this issue be



discussed further by both the Social/Economic Work Group and the FIN Committee in the future. The next step after the evaluation of the pilot study would be to either conduct a similar pilot in the Gulf and Caribbean regions or implement the methods tested by the ACCSP study, depending on the outcome.

#### Development of QA/QC for Mail Survey

D. Donaldson stated that a draft section regarding mail survey has been developed and distributed to the group. D. Donaldson noted that editorial comments could be given to him or e-mailed to him as soon as possible. The group should focus on substantive changes. After some review, the group agreed that the section for mail surveys should be forwarded to the FIN Committee for their review and approval. The revised section is attached.

#### Other Business

S. Holiman brought up the issue of membership of the Work Group. When the Work Group was first established, the RecFIN(SE) Committee discussed adding people with more expertise in the social sciences and economics. However, since the RecFIN(SE) was not currently focusing on social and economic issues, it was decided to not alter the membership of the group. However, now that FIN appears to be working on social and economic issues, it might be an appropriate time to revisit the membership of the Work Group. After some discussion, **the group recommended that the FIN Committee readdress the membership of the Social/Economic Work Group. The group recommends that Ron Lukens and Lisa Kline be removed from the group and 2 - 4 people with social and economic expertise be placed on the group.** The people who will be selected for the Work Group will be determined by the FIN Committee at the upcoming fall meeting.

**There being no further business, the meeting was adjourned at 3:45 p.m.**

## **MAIL SURVEYS**

Mail surveys are a type of off-site survey method. The advantages of mail surveys over other approaches are mail surveys are relatively simple and cost-effective. These types of surveys are usually used to sample opinions about fishing issues and to develop sociological and economic profiles of anglers or of communities affected by fisheries. They can also be used as supplements to on-site creel surveys.

### **Survey Procedures**

Mail surveys can be applied as the initial point of survey contact using an existing sample frame or applied as a follow-up or add-on to a field intercept survey. License, permit or registration files can be used as the sample frame for mail surveys of the first type. These surveys are used most often for socioeconomic assessments to collect information that does not require the angler to recall detailed information on specific trips. When conducting surveys of this type, sampling is easier if the sample frame files are computerized, since selecting a simple random or stratified random sample is fairly straightforward. When the files are not computerized, sampling is usually conducted using a systematic random sampling since it is difficult to get simple random or stratified random samples of boxes of license cards.

Add-on mail surveys, as the name implies, are used to gather more detailed information than could be collected in the field. This approach requires the determination of an initial sampling protocol for selecting anglers in the field as well as a subsequent protocol for determining which intercepted anglers receive the add-on. While detailed trip-specific information, such as expenditures, is preferably gathered at the point of intercept, add-on mail surveys can be used to collect both trip related and general information from anglers if the time lapse between intercept and survey are not too great.

### **Design**

The structure of a typical mail survey consists of several mailings and a telephone follow-up of non-respondents. The multiple mailings typically cover introductions, reminders, thank-you messages, and rewards, as appropriate. One of the biggest concerns with mail surveys is the non-response. As with all survey methods, it is important to conduct mail surveys with professionalism, personalization, honesty, directness, and attention to detail. By doing this, the quality of response can be enhanced.

Before survey implementation, all forms should be pretested in the field. A survey agent should distribute the form to a number of "typical" respondents (i.e. not office mates). This will allow the agent to identify any problems the respondents have, and make changes to the reporting form accordingly.

### **First Mailing**

The first mailing should consist of a cover letter, a numbered questionnaire, and a postage-paid return envelope. Where deemed necessary or appropriate, an inducement to participate in the survey may also be included. All materials should be sent by first-class mail. It is important that the cover letter be written on official letterhead and personally signed by the leader of the survey team. The letter should provide an explanation of the survey's purpose as well as the importance of the respondent's participation in the survey. The content of the introductory letter will vary depending upon whether the survey is the first point of contact or whether it is a follow-up to the field interview. It should be established that all information will be kept confidential and explain that identification numbers are used only to check the respondent's name off the mailing list when the questionnaire is returned. The letter should also provide a telephone number respondents may call if they have questions. If a deadline for response is deemed appropriate, notification of such should also be included in the introductory letter. Any deadline, however, must be tactfully introduced, emphasizing the need for such, and allow reasonable time for the participants to respond.

As in any survey, questionnaire design is extremely important. The questionnaire should be straight forward and easy to use, and have a logical "hierarchical" layout from the standpoint of the respondents, not from an analytical viewpoint. The order and position of questions should not require a respondent to jump all over the form and flip pages. Questions of similar subjects should be grouped together. The print should be large enough to easily read, and there should be sufficient space for recording responses. The specific wording of questions should be considered carefully. Methodological studies have shown that even slight changes in wording, for example, "should" versus "could," drastically influence item response. All questions should have a clear and specific meaning, and redundant questions should be eliminated. Each questionnaire should have an identification number on the top of the first page. The questions should be brief and clearly stated. Open-end questions should be used sparingly, because they are hard to analyze and interpret when there is no opportunity for follow-up questions to clarify confusing answers. Finally, the questions should be as few as possible to satisfy the research needs while not excessively burdening the respondent.

The use of business reply envelopes with franked postage require less time to prepare and incur actual postage expense only when the envelopes are returned. However, stamped return envelopes imply a more personal approach and can provide for a slightly higher response.

All survey materials (cover letter, questionnaire, and return envelope) should be folded and stuffed together in the mailing envelope. Separate folding of materials suggests a less personal approach. When the respondent receives the envelope, the overall effect should be as pleasing as a personal business letter sent to an acquaintance. It is also important to send a postcard to everyone after the first mailing. The postcard should thank those who have already responded and reminds those who have not yet responded about the survey and the importance of their participation.

### Second Mailing

A second mailing to all non-respondents should be sent within a reasonable time after the initial mailing or after passing of response deadlines. The same techniques should be used as with the first mailing. However, the use of a new personalized cover letter is very important. This letter should

state that no response has been received to the first mailing and emphasize again the importance of the survey and the individuals participation. A new copy of the questionnaire and return envelope should be included because the original materials may have been thrown out or misplaced. A new response deadline, as appropriate, should be included.

### Third Mailing

A third mailing should be sent to all non-respondents several weeks after the second. The use of certified mail (despite costs) can be used since this mailing can significantly increase the overall response rate of the survey. The third mailing should utilize the same components of the previous mailings but should have yet another personalized cover letter.

### Telephone Follow-Up Survey

Usually, response rates of mail surveys are sufficient to obtain valid results. Sometimes, however, a concern about bias induced by the remaining non-respondents requires a follow-up survey by a different contact method. The follow-up interview usually will be by telephone rather than face-to-face. The purpose of the follow-up telephone survey is to both increase the response rate and allow for estimation of how the mail non-respondents differ from the mail respondents. If the mail survey had been a stratified random sample, a simple random sample of the non-respondents in each stratum should be contacted.

## **Non-response Bias**

Non-response in mail surveys may induce a non-response bias in the estimates. This occurs when the non-respondents differ in important characteristics from the respondents. The two groups may answer survey questions very differently, and wrong conclusions may be drawn if respondents are viewed as representative of the whole population. Non-response bias in mail surveys can be a major problem because non-response to mail surveys can be substantial.

### **Ways to Reduce Non-response**

There are several methods for reducing non-response in mail surveys. The first is to use Dillman's total design method. This method utilizes the multiple mailings, personal attention and other activities described previously in this section. By using this method, one is able to not only survey the avid participants (usually picked up in the first mailing) but also obtain information from the less serious participants (picked up in the second and third mailing).

Another way to reduce the non-response rate in a mail survey is use inducements or rewards for participating in the survey. This might be a monetary reward, a premium (such as a cap or t-shirt), or some kind of lottery for those who respond. It has been shown that monetary rewards are more effective than premiums or gifts. It has also been shown that the monetary reward does not have to be significant to improve the response rate of the survey.

## **Summary**

The use of mail surveys will continue to be popular because of their relative low cost and simplicity of operation. Mail surveys allow agencies to usually conduct the work with their existing facilities and staff. Off-site surveys (telephone, door-to-door) are often complicated and may require specialized staff or contractors to conduct the survey. A well-designed mail survey can provide useful information about a situation and provide a cost-effective method for collecting the data.

SEAMAP-Gulf Subcommittee Meeting  
MINUTES  
New Orleans, Louisiana  
Thursday, August 5, 1999

APPROVED BY:

  
COMMITTEE CHAIRMAN

Chairman Richard Waller called the meeting to order at 8:36 a.m. The following members and others were present:

**Members:**

Richard Waller, USM/IMS/GCRL, Ocean Springs, MS  
Mark Leiby, FDEP/FMRI, St. Petersburg, FL  
Joanne Lyczkowski-Shultz, NMFS, Pascagoula, MS  
Jim Hanifen, LDWF, Baton Rouge, LA  
Terry Cody, TPWD, Rockport, TX  
Richard Leard, GMFMC, Tampa, FL  
Steve Heath, ADCNR/MRD, Gulf Shores, AL

**Others:**

Scott Nichols, NMFS, Pascagoula, MS  
Mark McDuff, NMFS, Pascagoula, MS  
Ken Edds, LDWF, Baton Rouge, LA  
Terry Romaine, LDWF, Baton Rouge, LA

**Staff:**

Ron Lukens GSMFC, Ocean Springs, MS  
Dave Donaldson, GSMFC, Ocean Springs, MS  
Jeff Rester, GSMFC, Ocean Springs, MS  
Cheryl Noble, GSMFC, Ocean Springs, MS

**Adoption of Agenda**

The agenda was adopted as submitted.

**Approval of Minutes**

**J. Hanifen moved to approve the March 15, 1999 minutes as submitted. T. Cody seconded the motion and it passed unanimously.**

**Administrative Report**

J. Rester stated that the MARFIN proposal the Subcommittee submitted in December 1998 was not accepted. The score was 85.

The Spring Plankton Survey took place in April. He asked the Subcommittee to please send him copies of the cruise reports when cruises are completed.

R. Waller, J. Shultz, S. Nichols and J. Rester met with NMFS personnel in May to discuss budget issues and the need for additional SEAMAP funding. They mailed a two page informational letter about SEAMAP to Congress and are hoping for a positive response.

The Summer Shrimp/Groundfish Survey took place in June and July. J. Rester stated he participated in the Mississippi portion of the survey.

The generic SEAMAP presentation has been completed and he distributed CD-ROMs to each Subcommittee member.

A Questionnaire concerning shrimp real-time data was distributed in June. Response to this questionnaire was positive and most people want the data distributed. This will be further discussed under the next agenda item.

The 1997 Atlas has been completed and distributed.

The SEAMAP Operations Plan for 2000 and the NMFS portion of the Cooperative Agreement need to be updated. He asked the Subcommittee to review the documents and send in changes to him no later than September 1, 1999.

#### **Discussion of Real Time Data Mail Outs**

J. Rester stated the summer cruises were completed a couple of weeks ago and all of the states' data have been received and NMFS data should also be in by now. David Hanisko, who compiles the real time data, has been out of the office so the summer data could be delayed unless someone else in NMFS can run the data for the red snapper real time data mailouts.

J. Rester reported that a questionnaire concerning shrimp real time data distribution was mailed on June 1<sup>st</sup> to the real time data distribution listing which includes private citizens, shrimp fishermen, university, state and federal agencies. The overall response was positive and approximately 80 people responded out of 230. He said he has also received numerous telephone calls asking for the real time shrimp data this summer. The Subcommittee then discussed presenting this information to the GMFMC and NMFS and feels the Council received a bias request (from Texas Shrimp Association) when they decided to stop the real time data distribution.

**After extensive discussion, the Subcommittee decided they would need a more scientific survey to determine if the real time surveys should be continued. The Subcommittee asked J. Rester to acquire a listing of each state's Gulf shrimp license holders and they will develop a formula to sample a subset of the license holders for the new survey. M. Leiby moved to have J. Rester research the cost of designing and implementing a properly constructed scientific survey. J. Hanifen seconded and it passed unanimously.**

The Subcommittee agreed that this type of survey could be very expensive. Stopping the real time data distribution was a political issue so the Subcommittee decided that before actually doing the survey, they need to discuss with appropriate NMFS and GMFMC personnel if there is a possibility of resuming the distributions if the survey shows positive results. The Subcommittee also discussed

the fact that they must prove this information is wanted when NMFS and GMFMC had no data in making their decision to stop the mailouts.

### **SEAMAP Data Web page Development**

R. Waller stated data sets and protocols on cruises have been sent to the appropriate personnel at the University of Southern Mississippi to develop the SEAMAP Data Web Page. He has been assured that they should see positive results soon and he will keep the Subcommittee updated.

### **Status of FY2000 Budget**

S. Nichols stated SEAMAP will once again be level funded and the components should use \$1.2 for planning. R. Lukens stated that the GSMFC and ASMFC directors have decided to put forth a concerted effort to obtain more funding for SEAMAP. S. Nichols suggested the different components should work together and get material and information to Congress on SEAMAP.

### **Activities and Budge Needs for FY2000**

After discussion, all of the states agreed to try to do the same activities as last year at level funding. The breakdown is as follows:

a.	Florida	\$93,840.00
b.	Alabama	68,000.00
c.	Mississippi	94,495.00
d.	Louisiana	120,700.00
e.	Texas	54,804.00
f.	GSMFC	<u>80,564.00</u>
	TOTAL	\$512,403.00

### **Data Coordinating Work Group Report**

S. Nichols introduced Mark McDuff, the new leader of the Data Coordinating Work Group and the Subcommittee welcomed him. S. Nichols said he feels good about the data management because they are finally to a point where everything is available in one unified system. M. McDuff said they are currently uploading all of the data into the ORACLE system and should have everything online by spring of 2000. The Subcommittee agreed to send a letter of appreciation to Ken Savastano thanking him for all of his work on the Data Coordinating Work Group. The Subcommittee asked J. Rester to invite K. Savastano to the next Subcommittee meeting in October to present him with a plaque stating their appreciation for a job well done.

### **Preparation of Cooperative Agreements**

J. Rester asked the Subcommittee to review each document and send any changes to him within the next two weeks. Some of the work group members have changed and a new listing of the Subcommittee and work groups will be mailed to the Subcommittee when all changes are received.

### **Other Business**

M. Leiby stated he wants to appoint Kim Williams to the Environmental Data Work Group (in place of Carmelo Thomas) but he will discuss it with the Laboratory Director before it becomes official. Also, a new Environmental Data Work Group Leader needs to be appointed.



The Subcommittee discussed the problems they are having with entering gear codes and biocodes. Changes have been made to the gear codes and incorporated into the new EDWG report but the changes probably will not be online until March. M. Leiby stated that he has developed a new biocode system if anyone is interested. M. McDuff stated that he was interested and they would be in contact to discuss using the new biocode.

J. Rester informed the Subcommittee that GSMFC will be hiring a new ORACLE person in January and asked if the Subcommittee would be interested in housing the SEAMAP data management at the GSMFC office and have this new person assume all the responsibilities of the SEAMAP data management. This would save SEAMAP quite a bit of money.

**The Subcommittee asked if he had a proposal and J. Rester said they do not have a formal proposal as yet but said the operations would not change whatsoever and they should be able to do it for approximately \$60,000. The Subcommittee thinks this is a good idea but feels one person would not be able to handle what is involved in the data management of the SEAMAP program. After further discussion, M. Leiby moved to have J. Rester write a formal proposal and present it at the next Subcommittee meeting. J. Hanifen seconded it and it passed unanimously.**

**There being no further business, the meeting adjourned at 11:25 a.m.**

# **FIN Implementation Work Group Report**

FIN Implementation Work Group

August 1999

FIN Implementation Work Group  
Meeting Summary  
August 16, 1999  
Atlanta, Georgia

The meeting was called to order at 9:10 a.m. and the following people were present:

Guy Davenport, NMFS, Miami, FL  
Page Campbell, TPWD, Rockport, TX  
Toby Tobias, USVIDFW, St. Croix, VI  
Maury Osborn, NMFS, Silver Spring, MD  
Daniel Matos, PRDNER, Mayaguez, PR  
Dave Donaldson, GSMFC, Ocean Springs, MS

Purpose of the Meeting

D. Donaldson stated that the main purpose of the meeting was to review the products developed from the ComFIN implementation meetings and develop a report from the materials as well as develop a funding decision process, review and evaluation criteria, guidelines and implementation strategy for FIN.

Development of a ComFIN Implementation Report

D. Donaldson stated that the Gulf states, GSMFC, and NMFS met in July in New Orleans to discuss implementing ComFIN. One of the tasks for this group is to develop a report regarding the implementation of ComFIN. A meeting summary of the implementation meetings was provided to the work group and it was suggested that some introductory language be added and the bulleted items from the summary be incorporated into the report. The group discussed adding some information about the U.S. Virgin Islands and Puerto Rico regarding their commercial sampling programs. The group reviewed the meeting summary and made several changes. The draft implementation report is attached and represents the administrative record for this portion of the meeting.

Development of Funding Decision Process

D. Donaldson stated that the FIN discussed the need for a funding decision process, similar to the one developed by ACCSP. In the past, there has not been funds available for operational activities however with the creation of the GulfFIN line item, there needs to be a process for determining how the funds will be spend among the partners. M. Osborn and G. Davenport stated that they are concerned that the funds appropriated under the GulfFIN line item are not available to the federal partners of the program. D. Donaldson stated that the language associated with the line item clearly stated that the GulfFIN funds are to be used by the Gulf states only. M. Osborn noted that is one interpretation of the language and there are differing views about how the money can be spent. M. Osborn felt that NMFS is being left out of the loop and not being treated as a full partner. After some discussion, the group decided that this work group was not the appropriate body to determine how the money should be spent and **recommended to the FIN that the GSMFC State/Federal Fisheries Management Committee (S/FFMC) address the issue of how the GulfFIN line item should be allocated: to state partners only or both state and federal**

**partners, at their upcoming meeting in October.** D. Donaldson noted that the FIN Administrative Subcommittee discussed the possibility of reducing the number of FIN Committee meetings from twice a year to once a year. M. Osborn stated that there needs to be a list of funding priorities developed before the annual FIN meeting. This funding priority list will be developed on the subcommittee/work group level. The recreational (Biological/Environmental), commercial (Data Collection) and social/economic (Social/Economic) components will be charged with developing funding priorities for the upcoming year. It was noted that a clear charge to each of these groups needs to be developed so useful products are produced. Budgetary and technical reviews need to be incorporated into the process. It is important that realistic budgets be developed to ensure the funding is used in the most efficient manner. The technical review of the proposed activities will be part of subcommittee/work group charges. The activities will be reviewed prior to implementation of the tasks. Once the groups have presented their recommendations, the FIN Committee will review and consider which activities to fund for the upcoming year. Once the FIN Committee agrees upon the activities, the list needs to be approved by the appropriate bodies in the Gulf of Mexico and Caribbean. For the Gulf of Mexico, the S/FFMC will provide final approval and in the Caribbean, it will be the Caribbean Fishery Management Council.

#### Development of Guidelines and Review and Evaluation Criteria

The group developed guidelines and review and evaluation criteria to be used by the appropriate subcommittees/work groups. The group utilized the ACCSP process as a starting point. The FIN funding decision process is attached and represents the administrative record for this portion of the meeting.

#### Discussion of FIN Implementation Strategy

D. Donaldson noted that there may not be a need for an implementation strategy for FIN. On the recreational side, the program is basically implemented. In the states of Louisiana through Florida, state personnel are conducting the MRFSS. In Texas, there is a need to make their data available and ensure that it is compatible. This is a task that the RecFIN(SE) Committee is addressing. With the availability of funds for the Caribbean, the MRFSS methodology will be implemented in that region as well. On the commercial side, the Gulf states are working on implementing trip ticket programs. This is the first step in implementing a cooperative data collection program. Once the trip tickets are in place, information about detailed effort, biological sampling, social/economic data, and discards can be collected. M. Osborn stated that there may be a need to begin collecting social and economic information before full implementation of the trip ticket system. D. Donaldson noted that you need the trip ticket system in place before you can collect the social and economic data since the trip ticket program identifies the universe from which you will be sampling. Although it has never been formally stated, collection of the catch and effort data is the highest priority to the FIN. M. Osborn stated that she understood that but there is a real need for social and economic data and these types of data might be as high a priority as catch and effort and the group should consider the collection of social and economic data at the same level as catch and effort.

#### Other Business

M. Osborn stated that funds are available to begin recreational data collection in the Caribbean. The MRFSS methods will be used and NMFS will work with Puerto Rico and U.S.

Virgin Islands to coordinate the data collection activities. Sampling will begin in Wave 6 of this year and continue for three waves.

**There being no further business, the meeting was adjourned at 3:45 p.m.**

# **COMFIN IMPLEMENTATION REPORT**

Implementation Work Group

August 1999

## ComFIN Implementation Report

The Commercial Fisheries Information Network (ComFIN) and the Southeast Recreational Fisheries Information Network [RecFIN(SE)] are state-federal cooperative programs to collect, manage, and disseminate statistical data and information on the marine commercial and recreational fisheries of the Southeast Region.

The need for a comprehensive and cooperative data collection program has never been greater because of the magnitude of the recreational fisheries and the differing roles and responsibilities of the agencies involved. Many southeastern stocks targeted by anglers are now depleted, due primarily to excessive harvest, habitat loss, and degradation. The information needs of today's management regimes require data which are statistically sound, long-term in scope, timely, and comprehensive. A cooperative partnership between state and federal agencies is the most appropriate mechanism to accomplish these goals.

The scope of the ComFIN and RecFIN(SE) includes the Region's commercial and recreational fisheries for marine, estuarine, and anadromous species, including shellfish. Constituencies served by the program are state and federal agencies responsible for management of fisheries in the Region. Direct benefits will also accrue to federal fishery management councils, the interstate marine fisheries commissions, the National Park Service, the U.S. Fish and Wildlife Service, and the NOAA National Marine Sanctuaries Program. Benefits which accrue to management of fisheries will benefit not only commercial and recreational fishermen and the associated fishing industries, but the resources, the states, and the nation.

The mission of the ComFIN and RecFIN(SE) is to cooperatively collect, manage, and disseminate marine commercial, anadromous, and recreational fisheries data and information for the conservation and management of fishery resources in the Region and to support the development of an national program. The four goals of the ComFIN and RecFIN(SE) include to plan, manage, and evaluate commercial and recreational fishery data collection activities; to implement a marine commercial and recreational fishery data collection program; to establish and maintain a commercial and recreational fishery data management system; and to support the establishment of a national program.

Several meetings were held in July 1999 to get all the players involved in commercial data collection activities in the Gulf of Mexico at the table and discuss who will be responsible for the various tasks involved in the collection and management of these data. From those meeting, the following items were identified:

- It was stated that the trip ticket program is the backbone to the ComFIN. The first step in implementation of the ComFIN is the initiation of trip ticket programs in each state in the Gulf of Mexico. It is essential that each state have a trip ticket program to ensure that all landings are captured.
- It was suggested that some side-by-side activity between the current data collection (monthly landings) and the trip ticket be conducted for a specified time period.

When Florida implemented their trip ticket program, they conducted side-by-side comparisons for two years to ensure that the data being collected by the two programs were the same.

- It was stressed that the port agent system is very important and still plays an integral role in ComFIN. Although the landings information will be captured via the trip ticket, the port samplers will still be necessary to collect such information as detailed effort (where not captured on the trip ticket), biological sampling, social/economic data, and discards information. In Texas and Mississippi, there is a need for additional port samplers to conduct the necessary data collection activities. There was a stated need for increased biological sampling in Texas. This issue will be addressed during the development of the FY2000 cooperative agreement for FIN.
- The Gulf States Marine Fisheries Commission (GSMFC) will be the data warehouse for the Gulf of Mexico. It was also suggested that the GSMFC act as a centralized repository for all the dealers similar to the charter boat vessel frame. The GSMFC would be responsible for maintaining the data base and the states would be responsible for providing updates to the dealer information. The group discussed the data management aspects of the ComFIN and the fact that this system will be housed at the GSMFC. The issue of how this will affect the NMFS-Miami data management facility was discussed, and it was pointed out that although the ComFIN data management system will house the regional data, there is still a need for NMFS data management capabilities. However, it was noted that by establishing a regional data warehouse at the GSMFC, there will be some freeing up of NMFS staff to focus on other aspects of the program. It was also noted that a process for transferring ComFIN data into the Fisheries Information System (FIS) still needs to be developed.
- Since several of the states are beginning the implementation of trip ticket programs and Louisiana and Florida already have operational program, it was discussed and decided that there needs to be a workshop regarding establishing and maintaining a trip ticket program. The workshop will focus on the steps Florida and Louisiana took to implement their programs, problems and issues encountered, pros and cons about the way their systems are set up, costs of operation, etc. This workshop will be held during the Annual Fall GSMFC meeting at the Data Management Subcommittee meeting.
- The group discussed the issue of quota monitoring. It was decided that this issue needs to be further explored by the FIN Committee at their upcoming fall meeting. The partners need to develop a list of species that are currently monitored by quota. Alabama stated that they currently do not quota monitor any species. Mississippi stated that they have a quota for red drum and speckled trout. Also, the Committee needs to discuss what the expectation of a FIN quota monitoring system would be: estimation of fish or total count of fish.



- The issue of continued funding for commercial activities in the Southeast Region was discussed. There was concern that because of the initiation of trip ticket programs in the Gulf of Mexico, there might be the perception that the current funding for the Cooperative Statistics Program (CSP) could be utilized for other activities, possibly outside of the Region. It was pointed out that this is not the case and there is still the need for funding. Although the funds may not be used for current CSP activities, the money is essential to the collection of commercial data. It was also noted that a significant amount of funding for the U.S. Virgin Islands (100%) and Puerto Rico (65%) comes from the CSP and without these funds, the sampling in the Caribbean would be drastically reduced. It was decided that a schematic be developed (and incorporated into the State/Federal Fisheries Management Committee presentation) that outlines the amount of funds needs for all the commercial data collection activities in the Southeast. This could be used as rationale for keeping funding in the Southeast for commercial data collection (i.e. detailed effort, biological sampling, social/economic, discards).
- The group discussed the need for periodic meetings of the port samplers. Last year, there was a port sampler meeting in Tampa and was very successful. Unfortunately, there was not sufficient travel funds for the federal port agents; consequently, there was not a port samplers meeting this year in the Gulf; however, a meeting will be held in the Caribbean. It was noted that, as justification for securing funding, these meetings are actually part of the quality assurance/quality control aspects of the ComFIN. The meetings allow for interaction among the samplers and provides them a forum to discuss data collection methods, problems encountered in the field and potential solutions, and other related issues.
- It was noted that there needs to be a firm commitment from each state regarding the implementation of a trip ticket program. Texas has some concern about implementation of such a program and there needs to be discussion by state personnel to ensure this is the method for collecting commercial data that should be used.
- Alabama is attempting to have a pilot trip ticket program implemented by January 2000. They (as well as Mississippi) will use scanning technologies (similar to Louisiana's system) for entering the data. Another issue discussed concerned electronic reporting of the data. It was stated that there are some dealers (usually the high-volume dealers) who would be able and are actually interested in utilizing this technology for reporting the data. This issue will be pursued by the states and periodic updates to the FIN will be provided.
- The group discussed legislative issues regarding the implementation of a trip ticket program. Obviously, Louisiana and Florida have adequate laws and regulations to allow for the implementation of such a system. Texas's, Alabama's, U.S. Virgin Islands' and Puerto Rico's current laws and regulations are also adequate to allow for a trip ticket program. However, it appears that although the laws and regulations in

Mississippi give the authority to collect data about commercial fishing activities, they place the onus on the Department to collect this information and not require the dealers to report these data. Mississippi is exploring this issue and will make the necessary changes to allow for implementation of the program.

- There was concern by Mississippi and Alabama about compliance with the trip ticket program. It was noted that an integral part of this program is interaction with the dealers and fishermen to ensure that there is "buy-in" from the industry. It is important to involve the dealers and fishermen so that they are part of the process of developing the program. Without the support of industry, the trip ticket programs will not be successful. The U.S. Virgin Islands holds periodic meetings with their commercial fishermen to provide training on how to complete the necessary forms, provide an overview of the previous year's data, discuss confidentiality issues, and other pertinent topics.
- The U.S. Virgin Islands has a voluntary program where commercial fishermen report catch records (on a trip level) on a monthly basis. There are approximately 400 commercial fishermen in the U.S. Virgin Islands. There are no dealers in the U.S. Virgin Islands. The ComFIN trip ticket data elements are mostly captured by the monthly reporting. If charter boats sell their catch, they are required to report the landings. In Puerto Rico, there is weekly reporting from fishermen; however, that information is not trip-based. There is also reporting from dealers and these data are reported on a trip basis. About 60% of the commercial landings are reported through dealers. The reporting was recently made mandatory and as in the U.S. Virgin Islands, the ComFIN trip ticket data elements are mostly captured by the reporting program. The law which required mandatory reporting also establishes a recreational fishing license. It is illegal in Puerto Rico for charter boat operators to sell their catch. There are approximately 1,700 commercial fishermen in Puerto Rico. Both U.S. Virgin Islands and Puerto Rico collect data on finfish as well as shellfish.

## **Funding Decision Process for FIN**

The Commercial Fisheries Information Network (ComFIN) and the Southeast Recreational Fisheries Information Network [RecFIN(SE)] are state-federal cooperative programs to collect, manage, and disseminate statistical data and information on the marine commercial and recreational fisheries of the Southeast Region. All proposals should follow the current format for cooperative agreements being utilized in the Southeast. The following process are provided as guidance to program partners and are consistent with current federal guidelines.

### **Guidelines**

The following guidelines are proposed to assist State/Federal Fisheries Management Committee and Caribbean Fishery Management Council decisions on funding proposals:

- The FIN Committee is the appropriate bodies to review proposals and make funding recommendations to the State/Federal Fisheries Management Committee and Caribbean Fishery Management Council.
- Existing program partner funds are not expected to be replaced with new FIN funds, subject to current funding levels.
- After establishment of programs, the responsible partner(s) will assume long-term operational costs using a combination of partner and FIN funds.
- For the short-term, FIN funds will not be used for current programs in jurisdictions with established resources. Partners with existing programs that do not meet FIN standards may receive funds to bring their program to FIN standards.
- Even though a large portion of available resources may be allocated to one or more jurisdictions, new systems (including prototypes) will be selected to serve all partners' needs during the implementation phase.

### **Steps in the Funding Decision Process**

1. Annual Development of FIN Priorities
2. Review & Recommendations to the State/Federal Fisheries Management Committee and Caribbean Fishery Management Council
3. Approval/Disapproval by State/Federal Fisheries Management Committee and Caribbean Fishery Management Council

## **Development of FIN Priorities**

The subcommittee and work groups will develop a list of funding priorities prior to the annual FIN meeting (May/June) through meetings of the groups. The priority list will be based on the annual Operations Plan for that calendar year. This list will be approved by the FIN Committee.

## **Review and Evaluation**

The review and evaluation of all activities will take into consideration the following criteria, with no priority implied:

- The project benefits are region-wide in scope, pertain to all fisheries, and address regional questions or policy issues.
- The project is required by federal or state legislation (e.g., MSFCMA, ACFCMA, MMPA, ESA, or other acts).
- The project will provide early success in implementing the FIN, a quick payback, and a large return on investment.
- Data provided by the project is transferable to other FIN partners, and demonstrates the practical application of the FIN.
- The project will result in substantial improvement to current data collection and data management systems, in a cost-effective manner
- The project will fill large gaps in information, versus historical database transformation.
- The project will result in high quality data that can be utilized immediately for fisheries assessment and management.
- The project provides the capability to link to other data sets (GIS, environmental, fisheries dependent/independent data) enabling more sophisticated modeling and multi-use.
- The project serves as a prototype for the FIN, thereby generating secondary benefits.
- The project is supported by matching partner funds, where applicable.

# **ComFIN Data Collection Work Group Report**

ComFIN Data Collection Work Group

August 1999

Data Collection Work Group  
Meeting Summary  
August 17-18, 1999  
Atlanta, Georgia

The meeting was called to order at 9:00 a.m. and the following people were present:

Guy Davenport, NMFS, Miami, FL  
Trish Murphey, NCDMR, Morehead City, NC  
Joe Shepard, LDWF, Baton Rouge, LA  
Page Campbell, TPWD, Rockport, TX  
Geoff White, ASMFC, Washington, DC  
Kevin Anson, AMRD, Gulf Shores, AL  
Toby Tobias, USVIDFW, St. Croix, VI  
Mark Alexander, CBMF, Old Lyme, CT  
Dave Donaldson, GSMFC, Ocean Springs, MS

Purpose of the Meeting

D. Donaldson stated that the main purpose of the meeting was to review the differences between the ComFIN and ACCSP trip ticket programs; development of a QA/QC document for commercial data collection; development of standard codes for FIN; further development of the biological sampling program; and discussion about the fishery and discards modules under ComFIN.

Comparison of ComFIN and ACCSP Trip Ticket Programs

D. Donaldson noted that at the last FIN/ACCSP Compatibility Work Group meeting, the group began discussing the trip ticket systems for each program. During the discussions, several differences were identified. The group believed that the Data Collection Work Group should address these differences. Therefore, the Data Collection Work Group discussed the identified issues. The revised FIN trip ticket data elements are attached. The first issue was the absence of TRIP NUMBER in the FIN trip ticket program. This element is necessary for compatibility with the ACCSP program and it was inferred for the FIN program since trip number will be one for the majority of the trips in the Gulf of Mexico. To ensure compatibility, however, the group decided to add the element. Another issue was the addition of MARKET SIZE RANGE in the FIN program. This element was added to capture the actual count, pounds, etc. of the product instead of relying on categories that may vary among and between states. The actual number will allow users to view the actual measurement used by the dealers. The use of this element as well as the coding of the MARKET CATEGORY will be discussed later in this report. The group also decided to remove PRIMARY AREA FISHED and PRIMARY GEAR as separate data elements and provide descriptions in the AREA FISHED and GEAR(S) elements to explain when only primary area fished and/or gear was used.

Development of QA/QC Document for Commercial Data Collection

D. Donaldson distributed a draft QA/QC document developed by J. Shepard for commercial data collection. The group reviewed the document and the revised document is attached as represents the administrative record for this portion of the meeting. The group decided that the draft

document for more pertinent for biological sampling and discards. It was noted that there needs to be some language regarding the periodic port sampler meeting as part of QA/QC. D. Donaldson will develop this section and provide it with the report. The group needs to develop QA/QC sections for data management and validation methods. G. Davenport noted that there may be some information already written regarding data management. He will check with J. Poffenberger and get back with D. Donaldson with any pertinent information. D. Donaldson will develop a section for validation methods for inclusion in the document. The group noted that this information will be included in ComFIN Data Collection Procedures Document.

### Development of Standard Codes

D. Donaldson stated that the FIN needs to develop codes for the various data elements being collected for the commercial fisheries data. In an effort to be compatible with the ACCSP, the group utilized the codes already developed by ACCSP. Since both programs will be part of the FIS, it is important the both programs use similar codes to avoid confusion. The group discussed each data element for the trip ticket and biological sampling modules in terms of variable format and necessary codes. These comments will be presented to the ACCSP Standard Codes Committee at their upcoming meeting. The following are comments and suggested developed by the group. A list of revised codes is attached.

### **Table A.1, Standard Code Formats** **Table 1, Minimum Data Element Table**

In alpha numeric fields where there may be imbedded numbers (e.g. *reporting form series number*) should the numbers be right justified and zero filled. For example, CT00000001 vs CT1. Does this have any data management implications besides sort order. Same applies to the ITIS codes used for *Species*. Since the *Species* code is presently an "11 digit character code", would one use 87470101 for Alewife, or 00087470101?

*Reporting Form Series Number* - Does the value entered here have to be unique within *Form Type / Version*, within State, or globally across all partners? What are the data management implications?

*Vessel Identifier* - Is this supposed to be State Reg / USCG Doc or HIN? The field width suggests that VIN would be used.

*Date of Landing* (Table A.1) - The group recommends using FIPS state code rather than 2 character postal abbreviation. This would be uniform with *County/Port*.

State postal code seems to be a redundant component in many of the data elements (*Form Type / Version*, *Reporting Form Series Number* (?), and *Dealer ID*). Is this necessary?

### **Table A.3 Units of Measurement**

Why is there a code for *meat pounds* (MP)? Shouldn't this be indicated by *Landing Grade* code 70 (*meats*) or perhaps other codes such as 40-44 in table A.7?

### **Table A.3 Length Types**

For biological sampling, at-sea observer and protected species interactions the following length types need to be added:

- LT - Lip thickness (for conch, VI)
- SG - Shell length (for conch, VI)
- SH - Shell thickness (clams, NC)
- CC - Curved carapace width (turtles)
- CU - Curved carapace length (turtles)

For biological sampling, it was generally agreed that all lengths would be reported in mm and all length measurements should be standardized to fork length (or midline length) for finfish.

### **Table A.3 Dealer Identification**

Louisiana needs 7 digits for dealer code. Must all partners use the format template provided (ST12345AWD), or can all of the characters following the state code be utilized as a partner sees fit. *Note: Mark Alexander seemed to recall that the ACCSP Commercial Tech Committee later decided that all locations of a dealer would (or could) be separately licensed and that the WD / RD portion of the dealer number was only a Florida requirement. If this is the case, might the rightmost 8 characters of the dealer number be entirely up to the discretion of the partner?*

### **Table A.3 Area Code Format**

The *nnn.nnn* format for area codes will need to be modified for the Gulf of Mexico. Louisiana uses 4-digit hydrologic water body codes for their inshore areas. The area fished code would be based on latitude and longitude and would allow for as much detail as was needed. This idea will be presented to the ACCSP Standard Codes Committee

### **Table A.4, Gear Types and Codes Commercial Program Design, Table 2**

Table 2 will have to be expanded to include the values for *Quantity, Fishing Time, and Number of Sets* for the major gear groups listed in table A.4. The Group members will supply Dave Donaldson with Code table additions and effort descriptors (for Table 2) by September 13, 1999.

The TIP program may use  $yd^2$  for *Quantity of Gear* rather than float line length. This will be confirmed.

For gears with long deployment times (i.e. long lines), when does fishing time start and end. For example: the time interval from first hook in to last hook out?

Under *Traps and Pots* in Table 2, the Group suggested that *Mean Soak Time* would be a better descriptor for Fishing Time than *Total Soak Time*.



For the code 701 - *Troll & Hand Lines CMB*, what is "CMB"?

Is the code 804 - *Chemical* targeted at the aquarium trade?

Under other, add *Slurp Gun* and/or *Slurp Gun, Diving*.

What is 151 - *Pots and traps, puffer*?

The 750 series codes for *By Hand* do not seem to follow the same hierarchical format as other gears. The Group suggests:

750 By Hand  
751 By Hand, no diving gear  
752 By Hand, diving gear

#### **Table A.5, Disposition Codes**

The descriptions of the codes need to be clarified with more detail. For example, *Placed in car* might be expanded to read *Placed in live car or pound* and *Removed for sale* might read *Removed from car or pound for sale*. Code 229 - *No retention* was vague and confused with 204 - *No quota in area*.

There seems to be no clear indication in the codes 001 - 010 to suggest whether the product was sold or retained for personal use. *Was this supposed to be implicit by the appearance of dealer information?*

Need a code for unknown disposition.

#### **Table A.6, Market Categories (Size)**

The Group wondered if the codes CX through MX were specific to lobster, or could they also be applied to any other species (finfish, crabs, etc). If they can, the descriptions should convey this fact. Also, the specific application of these codes should be detailed in the metadata.

The Group also proposed that #1, #2, and #3 blue crabs would use the LG, MD, and LG size category codes respectively.

The Group also suggested a size category of NG (no grade) for an "unclassified category".

The Group commented that the size category codes 01-91 are not universally applicable to all fisheries where market size is specified as a range in size. Even count range intervals used for a given species may change seasonally or with size itself. For example, large shrimp may use an interval of 10 (20-30 / lb) while small shrimp may use an interval 20 (80-100 / lb). The field size does not permit the permutations that would be required to satisfy every fishery. To solve this problem, the workgroup proposed adding a data element pair: *Size Range Minimum and Maximum*.

These data elements would be used for any species where a market size category is expressed in terms of a range of sizes. To flag the use of this field pair, and to specify the units used, special Market Size Categories would be instituted as follows:

CT - counts per lb. (i.e. 80-100 / lb)

LB - pounds (i.e. 1-2 lbs, 2-3 lbs)

MM - millimeters

Using this method, the scallop size codes (S0-S6) could also be eliminated.

**Table A.7 Market Grade (Landing Condition)**

Is code 20 (*Scales*) a typo intended to be *Scaled*? If not, a code for *Scaled* should be added.

**Table A.8 Species Codes**

Adoption of the ITIS codes would be no problem.

**Table A.9 State and County Codes**

Can FIPS be used for port codes?

**The meeting was recessed at 4:30 p.m.**

**August 18, 1999**

**The meeting reconvened at 9:00 a.m.**

Discussion of Biological Sampling Module

D. Donaldson distributed a existing biological sampling module data elements. The group reviewed the elements and developed variable formats and coded, where necessary. The group discussed the LENGTH element. **It was recommended by the group that FIN used millimeters as the official measurement for length.** The LENGTH TYPE was also discussed by the group. G. Davenport noted that at last year's Gulf of Mexico port samplers meeting, a recommendation regarding length type was developed. **It stated that fork length or mid-line length should be used as the official length type measurement for FIN.** The group believed this recommendation should be discussed by the FIN Committee at the upcoming meeting. The revised biological sampling module elements are attached and represent the administrative record for this portion of the meeting.

Discussion of Fishery and Discards Modules

The group discussed the Fishery module and stated that all the elements necessary are included in the trip ticket elements. The method for sampling and collecting this information will be developed once the trip ticket programs have been implemented in the Gulf of Mexico. The group also discussed the development of discards and protected species interactions modules. The group agreed that these modules are currently lower priority than the trip ticket, biological sampling, and social/economic modules. The group believed ComFIN should focus on completing these modules before becoming involved in developing another module.

**There being no further business, the meeting was adjourned at 10:15 a.m.**

Table 1. Minimum data elements for the ComFIN trip ticket program (T = information collected on a trip ticket, B = information collected on trip ticket or via survey ).

DATA ELEMENT	DESCRIPTION	Collection method
Trip date	The date (mm/dd/yyyy) that the trip started. A trip is defined as the time the vessel left the dock to the point that the product was transferred	T
Trip number	Sequential number representing the number of a trip taken in a single day by either a vessel or individual. The trip number will default to one (1) when only a single trip is conducted	T
Form type/version #	Version identification number for the ComFIN trip ticket. Criteria will be developed to determine when a new version of the form will be identified	T
Form/Trip ticket number	Unique identifier for a specific trip. This will be printed on the actual trip ticket form. The numbers will be consecutive.	T
Vessel ID	Coast Guard or state registration number (will be linked to unique vessel identifier. These identifiers must be trackable through time and space.)	T
Participant ID	Fisherman license# (will be linked to unique participant identifier [SSN, fed tax id#, etc.]. These identifiers must be trackable through time and space)	T
Species	Code for the species of fish caught. Each species is to be identified separately. Use of market or generalized categories should be avoided within species code fields or variables. (ITIS codes)	T
Quantity	The amount of each marine species that is transferred and/or sold.	T
Landing condition (Grade)	Code for condition landed (whole, gutted, headed, etc.). See appendix xx (to be adopted/developed)	T
Quantity units	Code for the units used for measuring landings (pounds, kilograms, etc.). See appendix xx (to be adopted/developed)	T
Market size range	Actual size range of species landed by market category	T
Ex-vessel value or Ex-vessel price	The total dollar value for each species that is landed or sold by market category The price per unit weight paid for each species that is landed or sold by market category	T
County (minimum) or port (optional) landed	Code that will provide the location within a state where the product was transferred. See appendix xx (to be adopted/developed).	T
State landed	Code that will identify the state where the product was landed or unloaded. See appendix xx (to be adopted/developed)	T
Dealer ID	This element is an identifier for the dealer at the point of each transaction. In the case of multiple dealers, the landings would be reported separately for each dealer.	T
Unloading date	Date (mm/dd/yyyy) the landed species was transferred to a dealer.	T
Market category	Code that will specify any market or grade categories that affect price, usually size related.	T
Gear(s)	Code(s) which identify(s) all the gears used to catch the landed species. If detailed effort is not collected via the trip ticket, this field will contain a code which describes the primary type of gear used to catch the landed species	T
Area fished	Code that provides all locations where fishing occurred, using NMFS/state water body codes. If detailed effort is not collected via the trip ticket, this field will contain a code which provides a general location where the fishing occurred, using NMFS/state water body codes. The distance from shore where fishing occurred [inshore, inland (0-3 mi or 0-9 mi depending on state), EEZ (3-200 mi or 9-200 mi depending on state), >200 mi.	T

Disposition	Code which describes the fate of the catch (i.e. discards, bait, personal consumption, etc). Disposition of discards should be recorded (i.e. regulatory vs. other discards, dead or alive, etc.)	B
Quantity of gear	The amount of gear employed	B
Days at sea	Days from the start of the trip to the return to the dock (dd:hh)	B
Number of crew	Number of crew on each trip, including captain.	B
Fishing time	Total amount of time (hrs) that gear was in the water and/or amount of search time for each trip (based on gear used - See Table 2)	B
Number of sets	Total number of sets or tows of gear during a trip	B

Table 2. Standard measurements of quantity of gear, fishing time, and number of sets for specific gear types.

TYPE OF GEAR	QUANTITY	FISHING TIME	NUMBER OF SETS
Traps and Pots	Number traps pulled	Mean soak time	
Trawls	Number towed	Total tow time	Number of tows
Gill Nets Entanglement	Float line length for string	Soak time	Number of string (net) hauls
Longlines	Number gangions/hooks	Soak time	Number of hauls
Dredges	Number pulled	Total tow time	Number of tows
Nets	Number of pieces of apparatus		
Rod and Reel	Number of lines (Number of hooks is secondary)	Soak time	
Purse Seines	Length of floatline	Search time	Number of sets
Hand Gear	Number of lines (Number of hooks is secondary)	Soak time	
Harpoons	Number	Search time	Number of harpoons

# DRAFT

## Port Sampler Quality Assurance Procedures

### **Biological Sampling/Discards**

New Port Samplers will be initially trained in fish identification and sampling techniques. Samplers will be tested on a minimum of 20 fish that are predominant in the commercial fishery in their State. Fish should be identifiable to species level and correct NODC codes identified for each species. Samplers will be re-tested every six months to ensure proper identification of fish. Each new port sampler will be accompanied on his first assignment by a supervisor to insure that proper procedures are utilized for sampling and identification of fish. If the supervisor deems it necessary, he/she will accompany the port sampler on subsequent assignments until the supervisor is sure the sampler is performing efficiently. Supervisors will review 100% of data collected from the first three solo assignments of a new port sampler for accuracy, completeness and compliance with standard operating procedures. After the first three solo assignments, supervisors will review data from one assignment every three months for accuracy.

For each 6 months of active sampling, a port sampler will have a quality assurance/quality control (QA/QC) visit from a supervisor. The supervisor will check that the sampler has all standard equipment, forms and procedures manual. The supervisor will administer a written questionnaire on standard sampling procedures to the port sampler. The supervisor will also observe the port sampler conducting an assignment. The supervisor will fill out a rating form grading the sampler on his/her ability to properly identify and subset a sample, record weight and length information, record trip information and properly code all information obtained during the assignment. If the port sampler is found to be deficient in one or more areas, the supervisor may recommend partial or complete re-training of the sampler. Periodic meetings of port samplers is also part of QA/QC for ComFIN. The meetings allow for interaction among the samplers and provides them a forum to discuss data collection methods, problems encountered in the field and potential solutions, and other related issues.

### **Validation Methods**

As part of the QA/QC procedures for FIN, it is essential that some type of validation be conducted to verify the accuracy of commercial catch and effort information collected under the ComFIN. One of the validation methods is the use of fishery-dependent surveys. A multiple faceted approach will be used which include port sampling programs; at-sea observer programs; increased law enforcement presence such as overflights, boarding and summons reports, vessel tracking system, audits and inspections violations hotlines customs data, and consistency of penalties between states; and distribution of periodic data summaries to fishermen for self-verification. The presence at the docks or on vessels is the best method of verification and should be given highest priority. The periodic distribution of standard data summaries to fishermen and dealers will be provided through the FIN data management system. Another method is the use of audits and inspections of records either on-site or at an agency of records kept by fishermen and dealers of productions, purchases, and sales of fishery products in comparison to those data actually submitted to and received by the

reporting agency. This can be accomplished via record content, submission frequency, and retention period specified by federal and/or state statutes or other regulations; statistically valid random selection of a portion of the fishermen and/or dealers involved in fisheries or a particular stratum of a fishery to assess compliance rates with reporting rules and accuracy of reporting data; scope of audits may require additional information to that reported in order to verify accuracy of reported data; and auditors must be granted official access to these additional sources of information as needed to perform such audits. This method should be used only on an as-needed basis. Other methods that could be used include random additional logbooks; independent reports from fishermen and dealers of certain data elements; fishermen permit qualification; quota monitoring activities; or any combination of the above. These methods should be used only on an as-needed basis.

Standard data elements of FIN biological sampling module.

DATA ELEMENT	DESCRIPTION	FORMAT
Trip Ticket Number	Trip Ticket Number If Available	see Table A.1
Record Number	Annual Sequential Interview Number by port sampler	3 digit numeric
Record Type	Random or Bioprofile (length frequency vs. hard parts)	2 digit numeric
Sample Date	Month / Day / Year	see Table A.1
Sampler	Port Agent Code	4 digit numeric
State (Landing)	State Code (FIPS)	see Table A.1
County (Landing)	County Code (FIPS)	see Table A.1
Sampling Location	Dealer Number	see Table A.1
Gear Code	Gear Code	see Table A.1
Area Fished	Area Code	see Table A.1
Species Code	ITIS species Code	see Table A.8
Landing Condition	Condition Landed (Whole, Gutted, Headed, Etc.)	see Table A.7
Market Size Range	Actual Size Range	
Market Category	Code that will specify any market or grade categories that affect price, usually size related.	see Table A.6
State (Sampled)	State Code (FIPS)	see Table A.1
County (Sampled)	County Code (FIPS)	see Table A.1
Number Measured	Number of Fish Measured	3 digit numeric
Length	Length of Individual Fish (in millimeters)	4 digit numeric
Length Type	Total Length, Standard Length, etc.	2 digit alphanumeric
Weight	Weight of Individual Fish	4 digit numeric
Weight Units	(Pounds, Kilograms, Etc.)	2 digit alphanumeric
Sex	Sex Code	2 digit alphanumeric
Sex Stage	Stage of Reproduction	2 digit alpha number
Age Tag Number	Annual Age Structure Identifier, sequential # by species	4 digit numeric



**Table A.1.** Standard Code formats for required information to be provided on a trip basis by all Gulf of Mexico and Caribbean dealers and fishermen under the FIN commercial data collection program.

Data Element	Format	Data Element	Format
Form Type/Version Number	12 digit alphanumeric	State Landed	2 character postal alpha abbreviation (see Table A.9)
Reporting Form Series Number	12 digit alphanumeric	Dealer Identification	2 digit character postal alpha abbreviation plus 8 character code (see Table A.3)
Trip Start Date	MM/DD/YYYY Date Format 8 character	Unloading Date	MM/DD/YYYY Date format (8 character)
Vessel Identifier	11 digit character	Market Size	2 digit alpha-numeric code (see Table A.6)
Individual Identifier	11 digit character	Grade (Landing Condition)	2 digit numeric code (see Table A.7)
Trip Number	2 digit numeric	Gear(s)	3 digit numeric code (see Table A.4)
Species	ITIS 11 digit character code (see Table A.8)	Quantity of Gear (See Table 2)	6 digit numeric (see Table 2)
Quantity	8 digit numeric plus two decimal points	Days/Hours at Sea	DD:HH
Units of Measurement	2 digit character code (see Table A.3)	Number of Crew (including Captain)	3 digit numeric
Disposition of Catch	3 digit character code (see Table A.5)	Fishing Time	Hours DD:HH:MM
Ex-Vessel Value or Price	5 digit numeric plus three decimal points	Area Fished	3 digit numeric plus 2 decimal places (see Table A.3 and Figures A.1 - A.10)
County or Port Landed	FIPS codes 3 digit character: county 5 digit character: port (see Table A.9)	Number of Sets	3 digit numeric

**Table A.3.** Summary of standard FIN codes and formats for units of measurement, length type, dealer identification, general fishing area and access site type.

Data Element	Coding
Units of Measurement	BG: bags or sacks BR: barrels BU: bushels or baskets BX: boxes CM: centimeters DZ: dozens GL: gallons GM: grams HH: hogsheads (1225 pounds; used in sardine industry) KG: kilograms LB: pounds LT: liter MM: millimeters MP: meat pounds MT: metric tons NO: numbers OZ: ounces PS: pounds in shell QT: quarts TH: thousands of standard fish (670 pounds; used in menhaden industry) TN: short tons
Length Type	SL: standard length FL: fork length TL: total length CF: curved fork length CW: carapace width CL: carapace length SD: shell diameter CO: core length LT: lip thickness (for conch, VI) SG: shell length (for conch, VI) SH: shell thickness (clams, NC) CC: curved carapace width (turtles) CU: curved carapace length (turtles)

Data Element	Coding
CDealer Identification	ST1234567  ST: indicates state 1234567: indicates dealer ID number
Area Fished	NMFS area codes plus 4 decimal places For the purposes of data management., go with two fields. One for the larger area, and one for the smaller inshore area, i.e. statistical area, sub-area (waterbody code)  .0000: 0-3 miles .0001-.9997: Waterbody codes .9998: EEZ .9999: International waters  * - The decimal points can also be used for more detailed area data such as 10' grids.
Distance From Shore (generated values for the database)	1 = inland < 0 2 = inshore (0-3 miles on Atlantic coast, 0-9 nautical miles on Florida and Texas Gulf coast ( <i>Territorial waters</i> ) 3 = EEZ (3-200 miles on Atlantic coast, 9-200 miles on Florida and Texas Gulf coast. 4 = International (Greater than 200 miles)
Access Site Type	0 = NA  <b>Public Access</b> 1 = launch ramp 2 = boat slip 3 = moored from dock 4 = other  <b>Private Access</b> 5 = personal residence/dock 6 = private locked gate marina 7 = private property unlocked marina 8 = other

Table A.4. Standard FIN gear types and codes.

Code	Gear Type
000	Not Coded
<b>Haul Seines</b>	<b>010-029</b>
010	Haul Seines
020	Other Seines
021	Stop Seines
022	Common Seine
023	Swipe Nets
<b>Purse Seines</b>	<b>030-049</b>
030	Purse Seine
031	Purse Seine, Tarp
040	Lampara / Ring Nets
<b>Fixed Nets</b>	<b>050-079</b>
050	Pound Nets
060	Fyke Nets
070	Other Fixed Nets
071	Weirs
072	Trap Nets
073	Floating Traps (Shallow)
074	Bag Nets
075	Channel Nets
076	Stop Net
077	Hoop Net

Table A.4 (cont'd).

Trawls 080-129	
Code	Gear Type
080	Beam Trawls
081	Beam Trawls, Fish
082	Beam Trawls, Other - Shrimp, chopsticks
090	Otter Trawls
091	Otter Trawl Bottom, Crab
092	Otter Trawl Bottom, Fish
093	Otter Trawl Bottom, Lobster
094	Otter Trawl Bottom, Scallop
095	Otter Trawl Bottom, Shrimp
096	Otter Trawl Bottom, Other
097	Otter Trawl Midwater
110	Other Trawls
111	Trawl, Clam Kicking
112	Otter Trawl Midwater, Paired
113	Otter Trawl Bottom, Paired
114	Trawl, Roller
115	Trawl, Roller Frame
116	Trawl, Skimmer
117	Scottish Seine
118	Butterfly Nets
119	Danish Seine
120	Fly Net

Table A.4.(cont'd).

Pots and Traps 130-199	
Code	Gear Type
130	Pots and Traps
131	Pots & Traps, Conch
132	Pots & Traps, Blue Crab
136	Pots & Traps, Crab, Peeler
137	Pots & Traps, Crayfish
138	Pots & Traps, Eel
139	Pots & Traps, Fish
140	Pots & Traps, Spiny Lobster
141	Pots & Traps, Octopus
142	Pots & Traps, Periwinkle or Conkle
143	Pots & Traps, Shrimp
144	Pots & Traps, Turtle
145	Pots & Traps, Stone Crab
146	Pots & Traps, Scup
147	Pots & Traps, Black Sea Bass
148	Pots & Traps, Reef Fish
149	Pots & Traps, Hagfish
<b>150</b>	<b>Pots &amp; Traps, Golden Crab</b>
<b>151</b>	<b>Pots &amp; Traps, Puffer</b>
160	Pots & Traps, Lobster
161	Pots & Traps, Lobster Inshore
162	Pots & Traps, Lobster Offshore
163	Pots & Traps, Lobster Double Parlor
180	Pots & Traps, Other
181	Pots, Unclassified
182	Box Traps
183	Wire Baskets
184	Slat Traps (Virginia)

Table A.4 (cont'd).

<b>Gill Nets 200-299</b>	
<b>Code</b>	<b>Gear Type</b>
200	Gill Nets
201	Gill Nets, Floating Drift
202	Gill Nets, Sink Drift
203	Gill Nets, Floating Anchor
204	Gill Nets, Sink Anchor
205	Gill Nets, Runaround
206	Gill Nets, Stake
207	Gill Nets, Other
210	Trammel Nets
211	Trammel Nets, Floating Drift
212	Trammel Nets, Sink Drift
213	Trammel Nets, Floating Anchor
214	Trammel Nets, Sink Anchor
215	Trammel Nets, Runaround
216	Trammel Nets, Other
<b>Rod &amp; Reel 300-399</b>	
300	Rod and Reel
301	Rod and Reel, Manual
302	Rod and Reel, Electric
303	Electric/Hydraulic, Bandit Reels
320	Troll Lines
321	Troll Line, Manual
322	Troll Line, Electric
323	Troll Line, Hydraulic

Table A.4 (cont'd).

Long Lines 400-499	
Code	Gear Type
400	Long Lines
401	Long Lines, Vertical
402	Long Lines, Surface
403	Long Lines, Bottom
404	Long Lines, Surface, Midwater
405	Lines, Trot
406	Turtle Hooks
Dredge 500-549	
500	Dredge
501	Dredge, Hydraulic, Clam
502	Dredge, Hydraulic Escalator, Clam
503	Dredge, Clam
Dip Nets & Cast Nets 550-599	
550	Dip Nets
551	Cast Nets
552	Bully Nets
Rakes, Hoes, & Tongs 600-649	
600	Tongs
601	Hand Tongs
602	Patent Tongs
620	Rakes
621	Rakes, Bull
622	Rakes, Oyster
623	Rakes, Hand
630	Hoes
631	Rakes/Shovels/Pitchforks
632	Picks
633	Scrapes



Table A.4 (cont'd).

Code	Gear Type
<b>Spears &amp; Gigs 650-699</b>	
650	Harpoons
660	Spears
661	Spears, Diving
662	Gigs
663	Powerheads
670	Handheld Hooks
671	Sponge Hooks
<b>Hand Line 700-749</b>	
700	Hand Line
701	Troll & Hand Lines CMB
702	Hand Lines, Auto Jig
<b>By Hand 750-799</b>	
750	By Hand
751	No Diving Gear
752	Diving Gear
<b>Other Gears 800-849</b>	
800	Other Gears
801	Unspecified Gear
802	Combined Gears
803	Aquaculture
804	Chemical, Other
805	Bush Net

**Table A.5.** Standard FIN disposition codes.

Code	Disposition
General Utilization Codes      000      Used on fishermen and dealer reporting forms	
000	No Catch
001	Food
002	Personal Use
003	Placed in Car
004	Removed for Sale
005	Aquaculture
006	Canned Pet Food
007	Animal Food
008	Bait
009	Reduction/Meal
010	Aquarium

**Table A.6. Standard FIN codes for market categories, based on market size.**

Code	Market /Size Category
PW	Pee wee (rats)
TY	Tiny (young school)
LI	Lights
CX	Lobster Chix (1-1.25 lb)
SM	small (schoolies), #3 crabs
QT	Lobster quarters (1.25 lb)
MD	Medium or lobster select (1.5-2 lbs), #2 crabs
LG	Large or lobster Large (2-3 lb), #1 crabs
XL	Extra large (Double mark)
XX	Extra-extra large (Triple mark)
GI	Giants, colassals, or lobster jumbo, stone crab
MX	Mixed or unsized ("Straight" or "Crate Run" for lobsters)
BT	Unclassified fish or shrimp sold as bait
UN	Unknown
CT	Count
NG	No grade
LB	Pounds
MM	Millimeters
CH	Chowder
CR	Cherry
CC	Cherry / chowder mix
LN	Little neck
LT	Little neck / top neck mix
MN	Middle neck
MX	Mixed or unsized
SC	Seed clams
SE	7/8 inch clams
TN	Top neck

**Table A.6. (Cont.)**

Code	Market /Size Category
MA	Male blue crabs
FE	Female blue crabs
S0	Sea Scallops 10 and under count
S1	Sea Scallops 11-20 count
S2	Sea Scallops 21-30 count
S3	Sea Scallops 31-40 count
S4	Sea Scallops 41-50 count
S5	Sea Scallops 51-60 count
S6	Sea Scallops 61+ count
SU	Sea Scallops, ungraded

**Table A.7.** Standard FIN codes for grade categories (landing condition).

Code	Grade (Landing Condition)
00	Ungraded
01	Round
02	Live
03	Wings
04	Heads
05	Pectoral girdles
06	Tongues / chins
07	Cheeks
08	Belly flaps
09	Tails
10	Fins
11	Fins fresh
12	Fins dried
13	Livers
14	Gizzards
15	Stomach / guts
16	Bones
17	With roe
18	Only roe
19	Milt (white roe)
20	Scales
21	Racks
22	Bled
23	Gutted - head on
24	Gutted - head off
25	Gutted - head off / tail off (cores)

Table A.7 (cont'd).

Code	Grade (Landing Condition)
30	Fillets
31	Fillets - with skin and ribs
32	Fillets - skin on, no ribs
33	Fillets - with ribs, no skin
34	Fillets - skinless / boneless
35	Fillets - deep skin
36	Fillets - blocks
40	Loins
41	Steaks
42	Chunks
43	Surimi
44	Minced
45	Sushi grade
46	Salted and split
60	Heads on (shrimp)
61	Heads off (shrimp)
62	Culls (American lobster)
63	New Shells (American lobster)
64	Hard Shells (American lobster)
65	Claws
66	Peeler (crab)
67	Soft (crab)
68	Sponge (crab)

Table A.7 (cont'd).

Code	Grade (Landing Condition)
70	Meats (bivalve)
71	Tubes / mantles
72	Tentacles
80	Meal
81	Oil

**Table A.8.** Standard FIN species codes (ITIS codes), and comparison to existing coding systems.

NMF	NMFS_NE	NODC	ITIS	NAME	SCIENTIFIC_NAME	AFS_NAME
			000000	NO CATCH		
0010	0010	87470101	161701	ALEWIFE	Alosa	ALEWIFE
0011		8747010105	161706	ALEWIVES	Alosa pseudoharengus	ALEWIVES
0012	1120	8747010102	161703	HERRING,BLUEBACK	Alosa aestivalis	HERRING, BLUEBACK
0016		8810050102	166156	ALFONSIN	Beryx splendens	ALFONSIN
0030	0030	88352808	168688	AMBERJACK	Seriola	AMBERJACK
0060	0060	874702	161826	ANCHOVY	Engraulidae	ANCHOVIES
0061		8747020101	161828	ANCHOVY,NORTHERN	Engraulis mordax	ANCHOVY, NORTHERN
0062		8747020202	161839	ANCHOVY,BAY	Anchoa mitchilli	ANCHOVY, BAY
0063		8747020210	161847	ANCHOVY,DEEPBODY	Anchoa compressa	ANCHOVY, DEEPBODY
0064		8747020211	161848	ANCHOVY,SLOUGH	Anchoa delicatissima	ANCHOVY, SLOUGH
0090		883555	169554	ANGELFISHES	Chaetodontidae	BUTTERFLYFISHES
0119	0123	8786010101	164499	ANGLERFISH	Lophius americanus	GOOSEFISH
0126		8835570101	169699	ARMORHEAD	Pentaceros richardsoni	ARMORHEAD, PELAGIC
0130		8835280601	168677	BIGEYE SCAD	Selar crumenophthalmus	SCAD, BIGEYE
0140		8835170101	168178	BIGEYE	Priacanthus arenatus	BIGEYE
0145		8835170201	168190	SHORT BIGEYE	Pristigenys alta	SHORT BIGEYE
0150		8803010201	165460	BALLYHOO	Hemiramphus brasiliensis	BALLYHOO
0180	0180	883701	170424	BARRACUDA	Sphyrænidae	BARRACUDAS
0181		8837010101	170426	BARRACUDA,PACIFIC	Sphyræna argentea	BARRACUDA, PACIFIC
0190	0190	8803020201	165551	NEEDLEFISH,ATLANTIC	Strongylura marina	NEEDLEFISH, ATLANTIC
0192		8851010202	172513	BLACK DRIFTFISH	Hyperoglyphe bythites	BLACK DRIFTFISH
0193		8851010201	172512	BARRELFISH	Hyperoglyphe perciformis	BARRELFISH
0194		8776013601	163589	BLACKFISH,SACRAMENTO	Orthodon microlepidotus	SACRAMENTO
0195		8835620306	170085	BLACKSMITH	Chromis punctipinnis	BLACKSMITH
0230	0230	8835250101	168559	BLUEFISH	Pomatomus saltatrix	BLUEFISH
0240		883520040101	168507	BLUE PIKE (EXTINCT)	Stizostedion vitreum glaucum	PIKE, BLUE
0270		8835280306	168612	BLUE RUNNER	Caranx crysos	RUNNER, BLUE
0300		8739010101	161121	BONEFISH	Albula vulpes	BONEFISH
0330	0330	8850030202	172409	BONITO,ATLANTIC	Sarda sarda	BONITO, ATLANTIC
0331		8850030201	172408	BONITO,PACIFIC	Sarda chiliensis	BONITO, PACIFIC
0332		8850030203	172410	BONITO,STRIPED	Sarda orientalis	BONITO, STRIPED
0333		88500302	172407	BONITO,UNC	Sarda	BONITO
0340		883555	169554	BUTTERFLY FISH	Chaetodontidae	BUTTERFLYFISHES
0360		8734010101	161104	BOWFIN	Amia calva	BOWFIN
0370		886003	173235	BOXFISH	Ostraciidae	BOXFISHES
0390		8755010306	161997	BROWN TROUT	Salmo trutta	TROUT, BROWN



0420		87760407	163954	BUFFALOFISHES	Ictiobus	BUFFALOFISHES
0450	0450	87770201	163996	BULLHEADS	Ictalurus	CATFISHES & BULLHEADS
0480		8791030801	164725	BURBOT	Lota lota	BURBOT
0510	0510	88510301	172564	BUTTERFISH	Peprilus	BUTTERFISH
0525		8851030101	172565	BUTTERFISH,PACIFIC	Peprilus simillimus	POMPANO, PACIFIC
0530		88510202	172545	CIGARFISH GENUS	Cubiceps	CIGARFISH GENUS
0535		8851020205	172550	CAPE FATHEAD CIGARFISH	Cubiceps capensis	CAPE FLATHEAD
0540		8831023101	167353	CABEZON	Scorpaenichthys marmoratus	CABEZON
0570	0570	8835260101	168566	COBIA	Rachycentron canadum	COBIA
0600		8835020403	167697	CABRILLA	Epinephelus analogus	SPOTTED CABRILLA
0630	0630	8776010101	163344	CARP	Cyprinus carpio	CARP, COMMON
0661		87770201	163996	CATFISHES & BULLHEADS	Ictalurus	CATFISHES & BULLHEADS
0662		8777020102	163997	CATFISH,BLUE	Ictalurus furcatus	CATFISH, BLUE
0663		8777020105	163998	CATFISH,CHANNEL	Ictalurus punctatus	CATFISH, CHANNEL
0664		8777020301	164029	CATFISH,FLATHEAD	Pylodictis olivaris	CATFISH, FLATHEAD
0665		8777020605	164043	CATFISHES (BULLHEAD,BROWN)	Ameiurus nebulosus	BULLHEAD, BROWN
0701		8755010402	162001	CHAR,ARCTIC	Salvelinus alpinus	ARCTIC CHAR
0720		87550101	161932	CHUBS	Coregonus	CHUBS
0750		88352812	168723	SCADS	Decapterus	SCADS
0780		8755010108	161942	CISCO (LAKE ERIE ONLY DUP 1681)	Coregonus artedii	HERRING, LAKE OR CISCO
0810	0810	8791030402	164712	COD,ATLANTIC	Gadus morhua	COD, ATLANTIC
0822		8791030401	164711	COD,PACIFIC,UNC	Gadus macrocephalus	COD, PACIFIC
0840	0840	88351607	168165	CRAPPIE	Pomoxis	CRAPPIE
0870	0870	8835280303	168609	CREVALLE	Caranx hippos	JACK, CREVALLE
0900	0901	8835440701	169283	CROAKER,ATLANTIC	Micropogonias undulatus	CROAKER, ATLANTIC
0926		8835440201	169257	CROAKER,PACIFIC,WHITE	Genyonemus lineatus	CROAKER, WHITE
0928		8835440607	169280	CORBINA,CALIFORNIA	Menticirrhus undulatus	CORBINA, CALIFORNIA
0930	0930	8839010201	170481	CUNNER	Tautoglabrus adspersus	CUNNER
0931		883544	169237	DRUMS	Sciaenidae	DRUMS
0932		8835440118	169255	TOTOABA	Cynoscion macdonaldi	TOTOABA
0933		8835440114	169251	CROAKER,SHORTFIN	Cynoscion parvipinnis	CORVINA, SHORTFIN
0934		8835441105	169303	CROAKER,YELLOWFIN	Umbrina roncador	CROAKER, YELLOWFIN
0935		8835442301	169358	CROAKER,BLACK	Cheilotrema saturnum	CROAKER, BLACK
0936		8835442401	169360	CROAKER,SPOTFIN	Roncador stearnsi	CROAKER, SPOTFIN
0960	0960	8791031101	164740	CUSK	Brosme brosme	CUSK
0985	0985	8815020102	166342	DEALFISH (RIBBONFISH)	Trachipterus arcticus	DEALFISH
0990		8850020201	172385	CUTLASSFISH,ATLANTIC	Trichiurus lepturus	CUTLASSFISH, ATLANTIC
1000		8755010208	161983	CUTTHROAT TROUT	Oncorhynchus clarki	TROUT, CUTTHROAT
1020		8755010401	162000	DOLLY VARDEN TROUT	Salvelinus malma	DOLLY VARDEN
1050	1050	88352901	168790	DOLPHINFISH	Coryphaena	DOLPHIN
1081	1060	8835440801	169288	DRUM,BLACK	Pogonias cromis	DRUM, BLACK
1082	1070	8835440901	169290	DRUM,RED	Sciaenops ocellatus	DRUM, RED
1135		8842122201	171618	PRICKELBACK,MONKEYFACE	Cebidichthys violaceus	PRICKLEBACK, MONKEYFACE

1136		874112	161324	EELS, CONGER	Congridae	CONGER EELS
1137		874113	161419	EELS, SNAKE	Ophichthidae	SNAKE EELS
1138		879201	164807	EELS, CUSK	Ophidiidae	CUSK-EELS
1139		8741050409	161194	EEL, MORAY, CALIFORNIA	Gymnothorax mordax	MORAY, CALIFORNIA
1140		8740	161123	EELS, UNC	Anguilliformes	EELS
1141	1150	8741010101	161127	EEL, AMERICAN	Anguilla rostrata	EEL, AMERICAN
1142	1160	8741120101	161326	EEL, CONGER	Conger oceanicus	CONGER EEL
1143		874105	161160	EEL, MORAYS	Muraenidae	MORAYS
1144		8792010401	164818	BEARDED BROTLA	Brotula barbata	BROTLA, BEARDED
1190		8855	172702	FLATFISH, UNC	Pleuronectiformes	FLATFISH, UNC
1199	1200	8857041504	172904	FLOUNDER, ATLANTIC, WINTER,	Pleuronectes americanus	FLOUNDER, WINTER
1203	1241	8857040603	172877	FLOUNDER, ATLANTIC, PLAICE, AM. (DAB)	Hippoglossoides platessoides	PLAICE, AMERICAN
1208	1218	8857030301	172735	FLOUNDER, ATLANTIC, SUMMER, (FLUKE)	Paralichthys dentatus	FLOUNDER, SUMMER
1209		88570303	172734	FLOUNDER, ATLANTIC, FLUKE, UNC	Paralichthys	FLOUNDER, FLUKES
1215	1220	8857040502	172873	FLOUNDER, ATLANTIC, WITCH, UNC (Gr SOLE)	Glyptocephalus cynoglossus	FLOUNDER, WITCH
1223	1251	8857030401	172746	FLOUNDER, ATLANTIC, SAND, DAB	Scophthalmus aquosus	FLOUNDER, WINDOWPANE
1228	1231	8857041506	172908	FLOUNDER, ATLANTIC, YELLOWTAIL	Pleuronectes ferrugineus	FLOUNDER, YELLOWTAIL
1234	1270	8857030305	172739	FLOUNDER, FOURSPOT	Paralichthys oblongus	FLOUNDER, FOURSPOT
1250		8857040102	172862	FLOUNDER, PACIFIC, ARROWTOOTH	Atheresthes stomias	FLOUNDER, ARROWTOOTH
1255		8857030309	172743	FLOUNDER, PACIFIC,	Paralichthys californicus	HALIBUT, CALIFORNIA
1260		88570301	172715	CAL. HALIBUT FLOUNDER, PACIFIC, SANDDAB UNC	Citharichthys	FLOUNDER, PACIFIC, SANDDAB UNC
1261		8857030101	172716	FLOUNDER, PACIFIC, SANDDAB	Citharichthys sordidus	SANDDAB, PACIFIC
1262		8857030102	172717	FLOUNDER, PACIFIC, SANDDAB, SPECKLE	Citharichthys stigmaeus	SANDDAB, SPECKLED
1263		8857030111	172726	FLOUNDER, PACIFIC, SANDDAB, LONGFIN	Citharichthys xanthostigma	SANDDAB, LONGFIN
1265		8857041201	172887	FLOUNDER, PACIFIC, DOVER SOLE	Microstomus pacificus	SOLE, DOVER
1270		8857041512	172920	FLOUNDER, PACIFIC, ENGLISH SOLE	Pleuronectes vetulus	SOLE, ENGLISH
1272		8857040601	172875	FLOUNDER, PACIFIC, FLATHEAD SOLE	Hippoglossoides elassodon	SOLE, FLATHEAD
1274		8857031501	172800	FLOUNDER, PACIFIC, FANTAIL SOLE	Xystreurus liolepis	SOLE, FANTAIL
1275		8857040401	172868	FLOUNDER, PACIFIC, PETRALE SOLE	Eopsetta jordani	SOLE, PETRALE

1280		8857043501	172977	FLOUNDER,PACIFIC, REX SOLE	<i>Errex zachirus</i>	SOLE, REX
1282		8857041510	172916	FLOUNDER,PACIFIC, ROCK SOLE	<i>Pleuronectes bilineatus</i>	SOLE,ROCK
1285		8857041701	172928	FLOUNDER,PACIFIC, SAND SOLE	<i>Psettichthys melanostictus</i>	SOLE, SAND
1287		8857041505	172906	FLOUNDER,PACIFIC, YELLOWFIN SOLE	<i>Pleuronectes asper</i>	SOLE,YELLOWFIN
1289		8857041401	172893	FLOUNDER,PACIFIC, STARRY	<i>Platichthys stellatus</i>	FLOUNDER,STARRY
1290		885801	172980	FLOUNDER,PACIFIC, UNC SOLE	Soleidae	SOLES
1291		8857031102	172784	FLOUNDER,PACIFIC, SOLE,BIGMOUTH	<i>Hippoglossina stomata</i>	SOLE, BIGMOUTH
1292		8857041511	172918	FLOUNDER,PACIFIC, SOLE,BUTTER	<i>Pleuronectes isolepis</i>	SOLE,BUTTER
1293		8857040403	172870	FLOUNDER,PACIFIC, SOLE,SLENDER	<i>Eopsetta exilis</i>	SOLE, SLENDER
1294		8857041601	172923	FLOUNDER,PACIFIC, SOLE,C-O	<i>Pleuronichthys coenosus</i>	SOLE,C-O
1296		8858020116	173077	TONGUEFISH,CALIFORNIA	<i>Symphurus atricauda</i>	TONGUEFISH, CALIFORNIA
1297		8857041602	172924	SOLE,CURLFIN	<i>Pleuronichthys decurrens</i>	SOLE,CURLFIN
1310		880301	165431	FLYINGFISHES	Exocoetidae	FLYINGFISHES
1320	1320	8850030702	172456	FRIGATE MACKEREL	<i>Auxis thazard</i>	MACKEREL, FRIGATE
1330	1330	873201	161092	GARFISHES	Lepisosteidae	GARS
1340	1340	8747010501	161737	GIZZARD SHAD	<i>Dorosoma cepedianum</i>	SHAD, GIZZARD
1350		883545	169406	GOATFISHES	Mullidae	GOATFISHES
1360		8776010301	163350	GOLDFISH	<i>Carassius auratus</i>	GOLDFISH
1380	1380	879401	165332	GRENADIERS	Macrouridae	GRENADIERS
1410	1410	883502	167674	GROUPERS	Serranidae	GROUPERS
1411		8835020404	167698	HIND,SPECKLED	<i>Epinephelus drummondhayi</i>	SPECKLED HIND
1412		8835020402	167696	HIND,ROCK	<i>Epinephelus adscensionis</i>	ROCK HIND
1413		8835020406	167700	HIND,RED	<i>Epinephelus guttatus</i>	RED HIND
1414		8835020411	167705	GROUPER,SNOWY	<i>Epinephelus niveatus</i>	GROUPER, SNOWY
1415		8835020405	167699	GROUPER,YELLOWEDGE	<i>Epinephelus flavolimbatus</i>	GROUPER, YELLOWEDGE
1416		8835020408	167702	GROUPER,RED	<i>Epinephelus morio</i>	GROUPER, RED
1417		8835020440	167743	GROUPER,MARBLED	<i>Epinephelus inermis</i>	GROUPER, MARBLED
1418		8835020508	167766	GROUPER,BROOMTAIL	<i>Mycteroperca xenarcha</i>	GROUPER, BROOMTAIL
1419		8835020509	167767	GROUPER, TIGER	<i>Mycteroperca tigris</i>	GROUPER, TIGER
1420		8835020409	167703	GROUPER,MISTY	<i>Epinephelus mystacinus</i>	GROUPER, MISTY
1422		8835020502	167760	GROUPER,BLACK	<i>Mycteroperca bonaci</i>	GROUPER, BLACK
1423		8835020501	167759	GROUPER,GAG	<i>Mycteroperca microlepis</i>	GAG
1424		8835020505	167763	SCAMP	<i>Mycteroperca phenax</i>	SCAMP
1425		8835020504	167762	GROUPER,YELLOWMOUTH	<i>Mycteroperca interstitialis</i>	GROUPER, YELLOWMOUTH
1426		8835020506	167764	GROUPER,YELLOWFIN	<i>Mycteroperca venenosa</i>	GROUPER, YELLOWFIN
1427		8835021701	167838	CREOLE-FISH	<i>Paranthias furcifer</i>	CREOLE-FISH
1428		8835020439	167741	GRAYSBY	<i>Epinephelus cruentatus</i>	GRAYSBY
1429		8835020438	167739	CONEY	<i>Epinephelus fulvus</i>	CONEY

1430		8835020412	167706	GROUPER,NASSAU	<i>Epinephelus striatus</i>	GROUPER, NASSAU
1440	1440	883540	169055	GRUNTS	Haemulidae	GRUNTS
1441		8835400102	169059	GRUNT,WHITE	<i>Haemulon plumieri</i>	GRUNT, WHITE
1442		8835400103	169060	MARGATE	<i>Haemulon album</i>	MARGATE
1443		8835400304	169084	MARGATE,BLACK	<i>Anisotremus surinamensis</i>	BLACK MARGATE
1444		8835400113	169069	GRUNT,BLUESTRIPED	<i>Haemulon sciurus</i>	GRUNT, BLUESTRIPED
1445		8835400108	169065	GRUNT,FRENCH	<i>Haemulon flavolineatum</i>	GRUNT, FRENCH
1446		8835400101	169058	GRUNT,TOMTATE	<i>Haemulon aurolineatum</i>	GRUNT, TOMTATE
1447		8835400111	169067	GRUNT, COTTONWICK	<i>Haemulon melanurum</i>	GRUNT, COTTONWICK
1448		8835400110	169066	GRUNT,SPANISH	<i>Haemulon macrostomum</i>	GRUNT, SPANISH
1449		8835400107	169064	GRUNT, SMALLMOUTH	<i>Haemulon chrysargyreum</i>	GRUNT, SMALLMOUTH
1452		8835400117	169074	GRUNT,SAILORS CHOICE	<i>Haemulon parrai</i>	GRUNT, SAILORS CHOICE
1470	1470	8791031301	164744	HADDOCK	<i>Melanogrammus aeglefinus</i>	HADDOCK
1500	1500	860601	159753	HAGFISH	Myxinidae	HAGFISHES
1520	1520	8791031001	164730	HAKE,ATLANTIC,RED	<i>Urophycis chuss</i>	HAKE, RED
1531	1531	8791031003	164732	HAKE,ATLANTIC,WHITE	<i>Urophycis tenuis</i>	HAKE, WHITE
1542		8791040102	164792	HAKE,PACIFIC(WHITING)	<i>Merluccius productus</i>	HAKE, PACIFIC
1550	1550	87910310	164729	HAKE,ATLANTIC,RED & WHITE	<i>Urophycis</i>	HAKE,ATLANTIC,RED & WHITE
1560		8835510401	169522	HALFMOON	<i>Medialuna californiensis</i>	HALFMOON
1588	1590	8857041902	172933	HALIBUT,ATLANTIC	<i>Hippoglossus hippoglossus</i>	HALIBUT, ATLANTIC
1589		8857041901	172932	HALIBUT,PACIFIC	<i>Hippoglossus stenolepis</i>	HALIBUT, PACIFIC
1590		88570419	172931	HALIBUT,ATLANTIC & PACIFIC	<i>Hippoglossus</i>	HALIBUT,ATLANTIC & PACIFIC
1650	1650	8851030106	172570	HARVESTFISH	<i>Pepilus alepidotus</i>	HARVESTFISH
1670	1670	874701020102	161724	HERRING,ATLANTIC,SEA	<i>Clupea harengus harengus</i>	HERRING, ATLANTIC
1676		874701020101	161723	HERRING,PACIFIC,SEA	<i>Clupea harengus pallasii</i>	HERRING,PACIFIC
1681		8755010108	161942	HERRING,LAKE	<i>Coregonus artedii</i>	HERRING, LAKE OR CISCO
1683		8747010601	161743	HERRING,ROUND	<i>Etrumeus teres</i>	HERRING, ROUND
1685	1685	87470102	161721	HERRING,SEA (OBSOLETE CODE)	<i>Clupea</i>	HERRING,SEA
1687		8747010701	161748	HERRING,ATLANTIC THREAD	<i>Opisthonema oglinum</i>	HERRING, ATLANTIC THREAD
1689		874701	161700	HERRINGS,UNC	Clupeidae	HERRINGS
1710	1710	875601	162057	HERRING SMELT	Argentiniidae	ARGENTINES
1730	1730	8747010103	161704	HICKORY SHAD	<i>Alosa mediocris</i>	SHAD, HICKORY
1760	1280	8858030101	172982	HOGCHOKER	<i>Trinectes maculatus</i>	HOGCHOKER
1790	1790	8839010901	170566	HOGFISH	<i>Lachnolaimus maximus</i>	HOGFISH
1799		883528	168584	JACKS	Carangidae	JACKS
1800		8835280304	168610	HORSE-EYE JACK	<i>Caranx latus</i>	JACK, HORSE-EYE
1803		8835280301	168606	JACK, YELLOW	<i>Caranx bartholomaei</i>	JACK, YELLOW
1805		8835280307	168613	BLACK JACK	<i>Caranx lugubris</i>	JACK, BLACK
1807		8835280202	168602	AFRICAN POMPANO	<i>Alectis ciliaris</i>	POMPANO, AFRICAN

1810		8835280803	168691	ALMACO JACK	<i>Seriola rivoliana</i>	JACK, ALMACO
1811		8835280308	168614	BAR JACK	<i>Caranx ruber</i>	JACK, BAR
1812		8835280801	168689	GREATER AMBERJACK	<i>Seriola dumerili</i>	AMBERJACK, GREATER
1814		8835281301	168738	RAINBOW RUNNER	<i>Elagatis bipinnulata</i>	RUNNER, RAINBOW
1815		8835280802	168690	LESSER AMBERJACK	<i>Seriola fasciata</i>	AMBERJACK, LESSER
1817		8835280804	168693	BANDED RUDDERFISH	<i>Seriola zonata</i>	RUDDERFISH, BANDED
1820		8835280101	168586	JACK MACKEREL	<i>Trachurus symmetricus</i>	JACK MACKEREL
1830		8835441202	169314	JACKKNIFE FISH	<i>Equetus lanceolatus</i>	JACKKNIFE-FISH
1850		8835020401	167695	JEWFISH	<i>Epinephelus itajara</i>	JEWFISH
1880	1880	8811030201	166283	JOHN DORY	<i>Zenopsis ocellata</i>	DORY, AMERICAN JOHN
1938		8850030503	172437	MACKEREL,CERO	<i>Scomberomorus regalis</i>	MAVKEREL,CERO
1939		8850030501	172435	MACKEREL,KING	<i>Scomberomorus cavalla</i>	MACKEREL,KING
1940	1940	8850030505	172434	MACKEREL,KING AND CERO	<i>Scomberomorus</i>	MACKEREL,KING AND CERO
1970	1970	88354406	169273	KING WHITING	<i>Menticirrhus</i>	KING WHITING
2000		8755010403	162002	LAKE TROUT	<i>Salvelinus namaycush</i>	TROUT, LAKE
2030		8603010301	159722	LAMPREY	<i>Petromyzon marinus</i>	LAMPREY, SEA
2031		8603010211	159713	LAMPREY,PACIFIC	<i>Lampetra tridentata</i>	LAMPREY, PACIFIC
2035		876209	162523	LANCETFISHES	<i>Alepisauridae</i>	LANCETFISHES
2060	2060	88450101	171671	LAUNCES	<i>Ammodytes</i>	LAUNCES
2070		883541	169129	EMPERORS,UNC	<i>Lethrinidae</i>	EMPERORS,UNC
2090	2090	8827010201	167116	LINGCOD	<i>Ophiodon elongatus</i>	LINGCOD
2095		8835280701	168680	LOOKDOWN	<i>Selene vomer</i>	LOOKDOWN
2100	2100	8831091501	167612	LUMPFISH	<i>Cyclopterus lumpus</i>	LUMPFISH
2116		8827010501	167120	MACKEREL,ATKA	<i>Pleurogrammus monoptyerygius</i>	ATKA MACKEREL
2120	2120	8850030302	172414	MACKEREL,ATLANTIC	<i>Scomber scombrus</i>	MACKEREL, ATLANTIC
2150	2150	8850030301	172412	MACKEREL,CHUB (THIMBLE-EYE, PACIFIC)	<i>Scomber japonicus</i>	MACKEREL, CHUB
2151		8850030701	172455	MACKEREL,BULLET	<i>Auxis rochei</i>	MACKEREL, BULLET
2160		8835281201	168724	SCAD,MACKEREL	<i>Decapterus macarellus</i>	SCAD, MACKEREL
2162		88500303	172411	MACKEREL,UNC. (SCOMBER)	<i>Scomber</i>	MACKEREL,UNC. (SCOMBER)
2174		8850060202	172492	MARLIN,BLACK	<i>Makaira indica</i>	MARLIN, BLACK
2176		8850060306	172504	MARLIN,STRIPED	<i>Tetrapturus audax</i>	MARLIN, STRIPED
2177	2161	8850060301	172499	MARLIN,WHITE	<i>Tetrapturus albidus</i>	MARLIN, WHITE
2179	2171	8850060201	172491	MARLIN,BLUE	<i>Makaira nigricans</i>	MARLIN, BLUE
2180	2181	885006	172486	MARLIN,UNC	<i>Istiophoridae</i>	BILLFISHES
2210	2210	87470104	161731	MENHADEN	<i>Brevoortia</i>	MENHADEN, ATLANTIC
2227		8776011802	163524	MINNOWS,SQUAWFISH, SACRAMENTO	<i>Ptychocheilus grandis</i>	SQUAWFISH, SACRAMENTO
2228		8776013001	163569	MINNOWS,HITCH	<i>Lavinia exilicauda</i>	HITCH
2229		8776013501	163587	MINNOWS,HARDHEAD	<i>Mylopharodon conocephalus</i>	HARDHEAD
2230		877601	163342	MINNOWS	<i>Cyprinidae</i>	CARPS AND MINNOWS
2250		883539	169013	MOJARRAS	<i>Gerreidae</i>	MOJARRAS
2280		875101	161903	MOONEYE	<i>Hiodontidae</i>	MOONEYES
2290		8847014701	171967	MUDSUCKER,LONGJAW	<i>Gillichthys mirabilis</i>	LONGJAW MUDSUCKER

2310		8835280705	168684	MOONFISH,ATLANTIC	<i>Selene setapinnis</i>	MOONFISH, ATLANTIC
2341	2341	8836010101	170335	MULLET,STRIPED	<i>Mugil cephalus</i>	MULLET, STRIPED
2346		8836010102	170336	MULLET,SILVER	<i>Mugil curema</i>	MULLET, WHITE
2347		883601	170333	MULLETS	Mugilidae	MULLETS
2348		8836010104	170338	MULLET WITH (ROE RED)	<i>Mugil liza</i>	LIZA
2370		8804040203	165647	MUMMICHOG	<i>Fundulus heteroclitus</i>	MUMMICHOG
2400	2400	8826010139	166745	OCEAN PERCH,ATLANTIC (REDFISH)	<i>Sebastes marinus</i>	REDFISH OR OCEAN PERCH
2410		8826010102	166707	OCEAN PERCH,PACIFIC	<i>Sebastes alutus</i>	ROCKFISH, PACIFIC OCEAN PERCH
2420	2420	8826010301	166787	BLACK BELLIED ROSEFISH	<i>Helicolenus dactylopterus</i>	ROSEFISH, BLACKBELLY
2500	2500	8793011601	165318	OCEAN POUT	<i>Macrozoarces americanus</i>	POUT, OCEAN
2501	3850	8850010301	172362	ESCOLAR	<i>Lepidocybium flavobrunneum</i>	ESCOLAR
2502		8850010401	172364	OILFISH	<i>Ruvettus pretiosus</i>	OILFISH
2503	2490	8813010102	166326	OPAH	<i>Lampris guttatus</i>	OPAH
2504		8850010201	172360	SNAKE MACKEREL	<i>Gempylus serpens</i>	SNAKE MACKEREL
2505		8835510201	169515	OPALEYE	<i>Girella nigricans</i>	OPALEYE
2510		8729020101	161088	PADDLEFISH	<i>Polyodon spathula</i>	PADDLEFISH
2520		883903	170809	PARROTFISH	Scaridae	PARROTFISHES
2525		8835350403	168840	CRIMSON ROVER	<i>Erythrocles monodi</i>	CRIMSON ROVER
2530		883560	169735	SURFPERCH,PACIFIC	Embiotocidae	SURFPERCHES
2531		8835600201	169739	PERCH,SHINER	<i>Cymatogaster aggregata</i>	PERCH, SHINER
2532		8835600301	169744	SEAPERCH,STRIPED	<i>Embiotoca lateralis</i>	SEAPERCH, STRIPED
2533		8835600302	169745	PERCH,BLACK	<i>Embiotoca jacksoni</i>	PERCH, BLACK
2534		8835600401	169747	SURFPERCH,WALLEYE	<i>Hyperprosopon argenteum</i>	SURFPERCH, WALLEYE
2535		8835600402	169748	SURFPERCH,SILVER	<i>Hyperprosopon ellipticum</i>	SURFPERCH, SILVER
2536		8835600501	169751	SEAPERCH,WHITE	<i>Phanerodon furcatus</i>	SEAPERCH, WHITE
2537		8835600601	169754	PERCH,NILE	<i>Rhacochilus vacca</i>	PERCH, PILE
2538		8835600602	169755	SEAPERCH,RUBBERLIP	<i>Rhacochilus toxotes</i>	SEAPERCH, RUBBERLIP
2539		8835600701	169757	SURFPERCH,REDTAIL	<i>Amphistichus rhodoterus</i>	SURFPERCH, REDTAIL
2540		8835600702	169758	SURFPERCH,BARRED	<i>Amphistichus argenteus</i>	SURFPERCH, BARRED
2541		8835600703	169759	SEAPERCH,CALICO	<i>Amphistichus koelzi</i>	SURFPERCH, CALICO
2542		8835600801	169761	SEAPERCH,RAINBOW	<i>Hypsurus caryi</i>	SEAPERCH, RAINBOW
2543		8835601002	169766	PERCH,DWARF	<i>Micrometrus minimus</i>	PERCH, DWARF
2544		8835601101	169769	SEAPERCH,PINK	<i>Zalembeus rosaceus</i>	SEAPERCH, PINK
2550		8835280902	168709	PERMIT	<i>Trachinotus falcatus</i>	PERMIT
2580	2580	8835400201	169077	PIGFISH	<i>Orthopristis chrysoptera</i>	PIGFISH
2610		875801	162137	PIKES OR PICKERELS	Esocidae	PIKES
2640		8835281501	168742	PILOTFISH	<i>Naucrates ductor</i>	PILOTFISH
2670		8835430201	169187	PINFISH	<i>Lagodon rhomboides</i>	PINFISH
2690	2691	8791030901	164727	POLLOCK,ATLANTIC	<i>Pollachius virens</i>	POLLOCK
2692		8791030701	164722	POLLOCK,WALLEYE(ALASKA)	<i>Theragra chalcogramma</i>	POLLOCK, WALLEYE
2710		883571	170287	POMFRETS	Bramidae	POMFRETS
2720	2720	8835280901	168708	POMPANO	<i>Trachinotus carolinus</i>	POMPANO, FLORIDA
2721		8851030101	172565	POMPANO,PACIFIC	<i>Pepilus simillimus</i>	POMPANO, PACIFIC
2750		8835400306	169086	PORKFISH	<i>Anisotremus virginicus</i>	PORKFISH
2760		886101	173283	PUFFERS	Tetraodontidae	PUFFERS

2765	8839010709	170510	PUDDINGWIFE (WRASSE)	<i>Halichoeres radiatus</i>	PUDDINGWIFE (WRASSE)
2810	8776040201	163917	QUILLBACK	<i>Carpiodes cyprinus</i>	QUILLBACK
2820	8835442501	169362	QUEENFISH	<i>Seriphus politus</i>	QUEENFISH
2840	8716020101	161015	RATFISH	<i>Hydrolagus collicii</i>	RATFISH SPOTTED
2850	8755010211	161989	RAINBOW TROUT,FW	<i>Oncorhynchus mykiss</i>	TROUT, RAINBOW
2860	8713	160806	RAYS,UNC	RAJIFORMES	RAYS,UNC
2861	8713030101	160833	RAY,PACIFIC ELECTRIC	<i>Torpedo californica</i>	RAY, PACIFIC ELECTRIC
2862	871305	160946	STINGRAYS	Dasyatidae	STINGRAYS
2863	8713070202	160981	RAY,BAT	<i>Myliobatis californica</i>	RAY, BAT
2865	88352701	168568	REMORA	Remora	REMORA
2870	8776012801	163565	ROACH,CALIFORNIA	<i>Hesperoleucus symmetricus</i>	CALIFORNIA ROACH
2900	8835160201	168097	ROCK BASS,FW	<i>Ambloplites rupestris</i>	BASS, ROCK
2927	8835021602	167832	BASS,KELP	<i>Paralabrax clathratus</i>	BASS, KELP
2928	8835021603	167833	SAND BASS,SPOTTED	<i>Paralabrax maculatofasciatus</i>	SAND BASS, SPOTTED
2929	8835021604	167834	SAND BASS,BARRED	<i>Paralabrax nebulifer</i>	SAND BASS, BARRED
2930	88350216	167830	ROCK BASSES,PACIFIC	Paralabrax	ROCK BASSES,PACIFIC
2931	8826010121	166727	ROCKFISH,BLACK	<i>Sebastes melanops</i>	ROCKFISH, BLACK
2932	8826010127	166733	ROCKFISH,BOCACCIO	<i>Sebastes paucispinis</i>	ROCKFISH, BOCACCIO
2933	8826010103	166708	ROCKFISH,BROWN	<i>Sebastes auriculatus</i>	ROCKFISH, BROWN
2934	8826010125	166731	ROCKFISH,CHINA	<i>Sebastes nebulosus</i>	ROCKFISH, CHINA
2935	8826010117	166722	ROCKFISH,CHILLIPEPPER	<i>Sebastes goodei</i>	ROCKFISH, CHILIPEPPER
2936	8826010128	166734	ROCKFISH,CANARY	<i>Sebastes pinniger</i>	ROCKFISH, CANARY
2937	8826010149	166754	ROCKFISH,COWCOD	<i>Sebastes levis</i>	ROCKFISH, COWCOD
2938	8826010122	166728	ROCKFISH,BLACKGILL	<i>Sebastes melanostomus</i>	ROCKFISH, BLACKGILL
2939	8826010124	166730	ROCKFISH,BLUE	<i>Sebastes mystinus</i>	ROCKFISH, BLUE
2940	8826010110	166715	ROCKFISH,DARKBLOTCHED	<i>Sebastes cramerii</i>	ROCKFISH, DARKBLOTCHED
2941	8826010130	166736	ROCKFISH,REDSTRIPED	<i>Sebastes proriger</i>	ROCKFISH, REDSTRIPED
2942	8826010138	166744	ROCKFISH,SHARPCHIN	<i>Sebastes zacentrus</i>	ROCKFISH, SHARPCHIN
2943	8826010106	166711	ROCKFISH,SILVERGRAY	<i>Sebastes brevispinis</i>	ROCKFISH, SILVERGRAY
2944	8826010111	166716	ROCKFISH,SPLITNOSE	<i>Sebastes diploproa</i>	ROCKFISH, SPLITNOSE
2945	8826010119	166725	ROCKFISH,SHORTBELLY	<i>Sebastes jordani</i>	ROCKFISH, SHORTBELLY
2946	8826010134	166740	ROCKFISH,YELLOWEYE	<i>Sebastes ruberrimus</i>	ROCKFISH, YELLOWEYE
2947	8826010131	166737	ROCKFISH,YELLOWMOUTH	<i>Sebastes reedi</i>	ROCKFISH, YELLOWMOUTH
2948	8826010115	166720	ROCKFISH,YELLOWTAIL	<i>Sebastes flavidus</i>	ROCKFISH, YELLOWTAIL
2949	8826010114	166719	ROCKFISH,WIDOW	<i>Sebastes entomelas</i>	ROCKFISH, WIDOW
2958	8826010201	166783	THORNYHEAD,SHORTSPINE	<i>Sebastolobus alascanus</i>	THORNYHEAD, SHORTSPINE
2959	882601	166704	SCORPIONFISH-THORNYHEADS	Scorpaenidae	SCORPIONFISHES
2960	88260101	166705	ROCKFISHES	Sebastes	ROCKFISHES
2961	8826010104	166709	ROCKFISH,AURORA	<i>Sebastes aurora</i>	ROCKFISH, AURORA
2962	8826010105	166710	ROCKFISH,REDBANDED	<i>Sebastes babcocki</i>	ROCKFISH, REDBANDED
2963	8826010108	166713	ROCKFISH,COPPER	<i>Sebastes caurinus</i>	ROCKFISH, COPPER
2964	8826010112	166717	ROCKFISH,GREENSTRIPED	<i>Sebastes elongatus</i>	ROCKFISH, GREENSTRIPED
2965	8826010123	166729	ROCKFISH,VERMILION	<i>Sebastes miniatus</i>	ROCKFISH, VERMILION

2966		8826010132	166738	ROCKFISH,ROSY	Sebastes rosaceus	ROCKFISH, ROSY
2967		8826010135	166741	ROCKFISH,STRIPTAIL	Sebastes saxicola	ROCKFISH, STRIPETAIL
2968		8826010142	166747	ROCKFISH,KELP	Sebastes atrovirens	ROCKFISH, KELP
2969		8826010143	166748	ROCKFISH,GREENSPOTTED	Sebastes chlorostictus	ROCKFISH, GREENSPOTTED
2970		8826010144	166749	ROCKFISH,STARRY	Sebastes constellatus	ROCKFISH, STARRY
2971		8826010145	166750	ROCKFISH,CALICO	Sebastes dalli	ROCKFISH, CALICO
2972		8826010146	166751	ROCKFISH,PINK	Sebastes eos	ROCKFISH, PINK
2973		8826010147	166752	ROCKFISH,BRONZESPOTTED	Sebastes gilli	ROCKFISH, BRONZESPOTTED
2974		8826010148	166753	ROCKFISH,SQUARESPOT	Sebastes hopkinsi	ROCKFISH, SQUARESPOT
2975		8826010152	166757	ROCKFISH,SPECKLED	Sebastes ovalis	ROCKFISH, SPECKLED
2976		8826010153	166758	ROCKFISH,CHAMELEON	Sebastes phillipsi	ROCKFISH, CHAMELEON
2977		8826010154	166759	ROCKFISH,GRASS	Sebastes rastrelliger	ROCKFISH, GRASS
2978		8826010155	166760	ROCKFISH,FLAG	Sebastes rubrivinctus	ROCKFISH, FLAG
2979		8826010156	166761	ROCKFISH,BANK	Sebastes rufus	ROCKFISH, BANK
2980		8826010158	166763	ROCKFISH,OLIVE	Sebastes serranoides	ROCKFISH, OLIVE
2981		8826010159	166764	ROCKFISH,TREEFISH	Sebastes serriiceps	TREEFISH
2982		8826010160	166765	ROCKFISH,HONEYCOMB	Sebastes umbrosus	ROCKFISH, HONEYCOMB
2983		8826010161	166766	ROCKFISH,WHITEBELLY	Sebastes vexillaris	ROCKFISH, WHITEBELLY
2984		8826010162	166767	ROCKFISH,GOPHER	Sebastes carnatus	ROCKFISH, GOPHER
2985		8826010163	166768	ROCKFISH,SWORDSPINE	Sebastes ensifer	ROCKFISH, SWORDSPINE
2986		8826010165	166770	ROCKFISH,PINKROSE	Sebastes simulator	ROCKFISH, PINKROSE
2987		8826010166	166771	ROCKFISH,GREENBLOTCHED	Sebastes rosenblatti	ROCKFISH, GREENBLOTCHED
2988		8826010168	166773	ROCKFISH,BLACK-AND-YELLOW	Sebastes chrysomelas	ROCKFISH, BLACK-AND-YELLOW
2990		883551	169503	RUDDERFISH (SEA CHUBS)	Kyphosidae	SEA CHUBS
2996		8835282201	168764	RUNNER	Scombroides sancti-petri	LEATHER-BACK
3019		8826010202	166784	THORNYHEAD, LONGSPINE	Sebastolobus altivelis	THORNYHEAD, LONGSPINE
3020		8827020101	167123	SABLEFISH	Anoplopoma fimbria	SABLEFISH
3026		8850060101	172488	SAILFISH	Istiophorus platypterus	SAILFISH
3050	3050	8755010305	161996	SALMON,ATLANTIC	Salmo salar	SALMON, ATLANTIC
3080	3080	8755010206	161980	SALMON,PACIFIC,KING	Oncorhynchus tshawytscha	SALMON, CHINOOK
3081		8755010202	161976	SALMON,PACIFIC,CHUM	Oncorhynchus keta	SALMON, CHUM
3082	3060	8755010201	161975	SALMON,PACIFIC,PINK	Oncorhynchus gorbuscha	SALMON, PINK
3083		8755010205	161979	SALMON,PACIFIC,SOCKEYE	Oncorhynchus nerka	SALMON, SOCKEYE
3084	3070	8755010203	161977	SALMON,PACIFIC,COHO	Oncorhynchus kisutch	SALMON, COHO
3085	3090	87550102	161974	SALMON,PACIFIC	Oncorhynchus	SALMON,PACIFIC,UNC
3110	3110	8835021002	167793	SAND PERCH	Diplectrum formosum	SAND PERCH
3111		8835021005	167796	SAND PERCH,DWARF	Diplectrum bivittatum	SAND PERCH, DWARF
3140		8747010301	161729	SARDINE,PACIFIC	Sardinops sagax	SARDINE, PACIFIC
3170		8835200402	168509	SAUGER	Stizostedion canadense	SAUGER
3196	3196	8803030201	165612	SAURY,ATLANTIC	Scomberesox saurus	SAURY, ATLANTIC
3198		8803030101	165609	SAURY,PACIFIC	Cololabis saira	SAURY, PACIFIC
3220		880303	165607	SAURY	Scomberesocidae	SAURIES
3230		8713010101	160809	SAWFISH	Pristis pectinata	SAWFISH, SMALLTOOTH



3236		88352812	168723	SCADS(EXCEPT BIGEYE)	Decapterus	SCADS
3237	3310	8835280102	168587	SCADS,ROUGH	Trachurus lathami	ROUGH SCAD
3260	3260	883102	167196	SCULPINS	Cottidae	SCULPINS
3261		882601	166704	SCORPIONFISHES	Scorpaenidae	SCORPIONFISHES
3262		8831021608	167298	SCULPIN,YELLOWFIN	Icelinus quadriseriatus	SCULPIN, YELLOWCHIN
3263		8826010402	166794	SPINYCHEEK SCORPIONFISH	Neomerinthe hemingwayi	SCORPIONFISH, SPINYCHEEK
3264		8831021801	167302	PACIFIC STAGHORN	Leptocottus armatus	SCULPIN, PACIFIC STAGHORN
3265		8826010614	166825	SPOTTED SCORPIONFISH	Scorpaena plumieri	SCORPIONFISH, SPOTTED
3270	3270	8831021503	167289	SEA RAVEN	Hemitripterus americanus	SEA RAVEN
3289	3296	883543	169180	SCUPS OR PORGIES	Sparidae	SCUPS OR PORGIES
3298		8835430101	169182	SCUP	Stenotomus chrysops	SCUP
3299		8835430102	169183	PORGY, LONGSPINE	Stenotomus caprinus	PORGY, LONGSPINE
3300		8835430601	169207	PORGY, RED	Pagrus pagrus	PORGY, RED
3304		8835430503	169198	PORGY, SAUCEREYE	Calamus calamus	PORGY, SAUCEREYE
3305		8835430501	169196	PORGY, GRASS	Calamus arctifrons	PORGY, GRASS
3306		8835430505	169200	PORGY, WHITEBONE	Calamus leucosteus	PORGY, WHITEBONE
3308		8835430506	169201	PORGY, KNOBBED	Calamus nodosus	PORGY, KNOBBED
3310		8835430508	169203	PORGY, LITTLEHEAD	Calamus proridens	PORGY, LITTLEHEAD
3312		8835430502	169197	PORGY, JOLTHEAD	Calamus bajonado	PORGY, JOLTHEAD
3314		8835430401	169192	PINFISH, SPOTTAIL	Diplodus holbrooki	PINFISH, SPOTTAIL
3351	3351	8835020301	167687	SEA BASSE, ATLANTIC,	Centropristis striata	SEA BASS, BLACK
3361		8835022901	167918	SEA BASS, PACIFIC,	Stereolepis gigas	SEA BASS, GIANT
3362		8835020305	167691	SEA BASS, ROCK	Centropristis philadelphica	SEA BASS, ROCK
3370		8835442901	169387	SEA BASS, PACIFIC, WHITE	Atractoscion nobilis	SEABASS, WHITE
3371		8835021101	167798	SPANISH FLAG	Gonioplectrus hispanus	SPANISH FLAG
3373		8835021202	167801	RED BARBIER	Hemanthias vivanus	BARBIER, RED
3374		8835021201	167800	LONGTAIL BASS	Hemanthias leptus	BASS, LONGTAIL
3375		8835020304	167690	SEA BASS, BANK	Centropristis ocyurus	SEA BASS, BANK
3380		877718	164157	SEA CATFISH	Ariidae	SEA CATFISHES
3410	3410	882602	166972	SEA ROBINS	Triglidae	SEAROBINS
3441	3441	8835440104	169241	SEA TROUT, GRAY	Cynoscion regalis	WEAKFISH
3447	3450	8835440102	169239	SEA TROUT, SPOTTED	Cynoscion nebulosus	SEATROUT, SPOTTED
3455		8835440106	169243	SEA TROUT, WHITE	Cynoscion arenarius	SEATROUT, SAND
3470		8747010502	161738	SHAD, THREADFIN	Dorosoma petenense	SHAD, THREADFIN
3471	3471	8747010101	161702	SHAD, BUCK	Alosa sapidissima	SHAD, AMERICAN BUCK
3475	3488	8709	160602	SHARK, NURSE	Squaliformes	SHARK, UNC
3475	3548	8709	160602	SHARK, THRESHER BIGEYE, FINS	Squaliformes	SHARK, UNC
3475	3558	8709	160602	SHARK, Squaliformes, UNC.	Squaliformes	SHARK, UNC
3476	3512	8708020401	160230	SHARK, DOGFISH, SMOOTH	Mustelus canis	SHARK, SMOOTH DOGFISH
3478		8708020516	160346	SHARK, NARROWTOOTH	Carcharhinus brachyurus	SHARK, NARROWTOOTH
3479		8708020512	160340	SHARK, SMALLTAIL	Carcharhinus porosus	SHARK, SMALLTAIL
3480	3481	8707100101	159977	SHARK, NURSE	Ginglymostoma cirratum	SHARK, NURSE
3481		8708020531	160409	SHARK, FINETOOTH	Carcharhinus isodon	SHARK, FINETOOTH

3482	3491	8707030101	159878	SHARK,SAND TIGER	<i>Odontaspis taurus</i>	SHARK, SAND TIGER
3483		8708030101	160502	SHARK,BONNETHEAD	<i>Sphyrna tiburo</i>	SHARK, BONNETHEAD
3484	4960	8707120101	159907	SHARK,BASKING	<i>Cetorhinus maximus</i>	SHARK, BASKING
3485		8708020504	160304	SHARK,BLACKNOSE	<i>Carcharhinus acronotus</i>	SHARK, BLACKNOSE
3486	3498	8707030101	159878	SHARK,SAND TIGER	<i>Odontaspis taurus</i>	SHARK,SAND TIGER FINS
3487	4828	8708020503	160289	SHARK,SANDBAR	<i>Carcharhinus plumbeus</i>	SHARK, SANDBAR
3488	4948	8708020301	160200	SHARK,ATLANTIC SHARPNOSE	<i>Rhizoprionodon terraenovae</i>	SHARK, ATLANTIC SHARPNOSE
3489	4848	8708020501	160268	SHARK,DUSKY FINS	<i>Carcharhinus obscurus</i>	SHARK, DUSKY
3490		8708020511	160336	SHARK,REEF	<i>Carcharhinus perezi</i>	SHARK, REEF
3491	4831	8708020505	160307	SHARK,BIGNOSE	<i>Carcharhinus altimus</i>	SHARK, BIGNOSE
3492		8708020515	160345	SHARK,GALAPAGOS	<i>Carcharhinus galapagensis</i>	SHARK, GALAPAGOS
3493	4851	8708020506	160310	SHARK,SILKY	<i>Carcharhinus falciformis</i>	SHARK, SILKY
3494	4861	8708020532	160413	SHARK,NIGHT	<i>Carcharhinus signets</i>	SHARK, NIGHT
3495	4871	8708020507	160318	SHARK,BLACKTIP	<i>Carcharhinus limbatus</i>	SHARK, BLACKTIP
3496	4881	8708020530	160401	SHARK,SPINNER	<i>Carcharhinus brevipinna</i>	SHARK, SPINNER
3497	4891	8708020502	160275	SHARK,BULL	<i>Carcharhinus leucas</i>	SHARK, BULL
3498	4901	8708020508	160330	SHARK,OCEANIC WHITETIP	<i>Carcharhinus longimanus</i>	SHARK, OCEANIC WHITETIP
3499	3538	8707040401	159916	SHARK,THRESHER	<i>Alopius vulpinus</i>	SHARK, THRESHER
3500		87070404	159915	SHARK,THRESHER UNC	<i>Alopius</i>	THRESHER SHARKS
3501	4811	8707040302	159911	SHARK,PORBEAGLE	<i>Lamna nasus</i>	SHARK, PORBEAGLE
3502	3581	8707040502	159926	SHARK,LONGFIN MAKO	<i>Isurus paucus</i>	SHARK, LONGFIN MAKO
3503	3501	871001	160604	SHARK,DOGFISH	<i>Squalidae</i>	SHARK, DOGFISH
3504	4931	8708020601	160424	SHARK,BLUE	<i>Prionace glauca</i>	SHARK, BLUE
3505	3551	8707040501	159924	SHARK,BONITO(SHORTFIN MAKO)	<i>Isurus oxyrinchus</i>	SHARK, SHORTFIN MAKO
3506		8708020103	160187	SHARK,SOUPFIN	<i>Galeorhinus zyopterus</i>	SHARK, SOUPFIN
3507		8708020902	160448	SHARK,LEOPARD	<i>Traces semifasciata</i>	SHARK, LEOPARD
3508	3591	8701	159785	SHARK,UNC	<i>Chondrichthyes</i>	SHARK,UNC
3509	3531	8707040401	159916	SHARK,THRESHER	<i>Alopius vulpinus</i>	SHARK, THRESHER
3510	3541	8707040402	159921	SHARK,BIGEYE THRESHER	<i>Alopius superciliosus</i>	SHARK, BIGEYE THRESHER
3511	3511	8708020401	160230	SHARK,DOGFISH,SMOOTH	<i>Mustelus canis</i>	SHARK, SMOOTH DOGFISH
3512	4801	8707040101	159903	SHARK,WHITE	<i>Carcharodon carcharias</i>	SHARK, WHITE
3513	4821	8708020503	160289	SHARK,SANDBAR	<i>Carcharhinus plumbeus</i>	SHARK, SANDBAR
3514	4841	8708020501	160268	SHARK,DUSKY	<i>Carcharhinus obscurus</i>	SHARK, DUSKY
3515	4911	8708020201	160189	SHARK,TIGER	<i>Galeocerdo cuvieri</i>	SHARK, TIGER
3516	4951	870803	160497	SHARK,HAMMERHEAD	<i>Sphyrnidae</i>	SHARK,HAMMERHEAD
3517	4921	8708020801	160433	SHARK,LEMON	<i>Negaprion brevirostris</i>	SHARK, LEMON
3518	4941	8708020301	160200	SHARK,ATLANTIC SHARPNOSE	<i>Rhizoprionodon terraenovae</i>	SHARK, ATLANTIC SHARPNOSE
3519		8711010101	160785	SHARK,PACIFIC ANGEL	<i>Squatina californica</i>	SHARK, PACIFIC ANGEL
3520		8755010501	162006	SELFISH	<i>Stenotus leucichthys</i>	ANCIEN
3521	3522	8710010201	160617	SHARK,DOGFISH,SPINY	<i>Squalus acanthias</i>	SHARK, SPINY DOGFISH

3522		8708030102	160505	SHARK,SMOOTH HAMMERHEAD	Sphyrna zygaena	SHARK, SMOOTH HAMMERHEAD
3523		8708030103	160508	SHARK,SCALLOPED HAMMERHEAD	Sphyrna lewini	SHARK, SCALLOPED HAMMERHEAD
3524		8708030104	160515	SHARK,GREAT HAMMERHEAD	Sphyrna mojarra	SHARK, GREAT HAMMERHEAD
3525	3508	871001	160604	SHARK,DOGFISH FINS	Squalidae	SHARK,DOGFISH
3526	4958	870803	160497	SHARK,HAMMERHEAD FINS	Sphyrnidae	SHARK,HAMMERHEAD
3527	4818	8707040302	159911	SHARK,PORBEAGLE FINS	Lamna nasus	SHARK, PORBEAGLE
3528		8705020101	159819	SHARK,SIXGILL	Hexanchus griseus	SHARK, SIXGILL
3529		8705020102	159826	SHARK,SIXGILL BIGEYE	Hexanchus vitulus	SHARK, SIXGILL BIGEYE
3530		8835442601	169364	SHEEPSHEAD,FW	Aplodinotus grunniens	DRUM, FRESHWATER
3531	3528	871001	160604	SHARK,DOGFISH SPINY FINS	Squalus acanthias	SHARK, SPINY DOGFISH
3560	3560	8835430301	169189	SHEEPSHEAD,ATLANTIC	Archosargus probatocephalus	SHEEPSHEAD
3570		8839013801	170744	SHEEPHEAD,CALIFORNIA	Semicossyphus pulcher	CALIFORNIA SHEEPSHEAD
3572		8710010601	160683	SHARK,DOGFISH COLLARED (COOKIE CUTTER)	Assists brasiliensis	SHARK, DOGFISH COLLARED
3574		8707040403	159922	SHARK,THRESHER PELAGIC	Alopius pelagicus	SHARK, PELAGIC THRESHER
3575		8708020404	160235	SHARK,GRAY SMOOTHHOUND	Mustelus californicus	SHARK, GRAY SMOOTHHOUND
3576		8708020405	160236	SHARK,BROWN SMOOTHHOUND	Mustelus Henley	SHARK, BROWN SMOOTHHOUND
3577		870502	159814	SHARK,COW	Hexanchidae	COW SHARKS
3578		8707030401	159897	SHARK,CROCODILE	Pseudo carcharias kamoharai	SHARK,CROCODILE
3580	3571	87070405	159923	SHARK,MAKO UNC	Isurus	SHARK,MAKO UNC
3581		8708020303	160206	SHARK,CARIBBEAN SHARPNOSE	Rhizoprionodon porosus	SHARK, CARIBBEAN SHARPNOSE
3582		8711010102	160787	SHARK,ATLANTIC ANGEL	Squatina dumerili	SHARK, ATLANTIC ANGEL
3583		8705020301	159844	SHARK,SEVENGILL BIGEYE	Heptranchias Perle	SHARK, SEVENGILL BIGEYE
3584		8707030103	159884	SHARK,BIGEYE SAND TIGER	Odontaspis noronhai	SHARK, TIGER BIGEYE SAND
3585		8707010101	159857	SHARK,WHALE	Rhincodon typus	SHARK, WHALE
3586		8704010101	159791	SHARK,HORN	Heterodontus Francesca	SHARK, HORN
3587		8705020202	159829	SHARK,SEVENGILL	Notoryctus cepedianum	SHARK, SEVENGILL
3588		8707040301	159910	SHARK,SALMON	Lamna dewdrops	SHARK, SALMON
3589		8708010501	160089	SHARK,SWELL	Cephaloscyllium ventriosum	SHARK, SWELL
3590		8850030506	172440	SIERRA	Scomberomorus sierra	PACIFIC SIERRA
3610	3610	8755030201	162035	CAPELIN	Mallotus villosus	CAPELIN
3620	3620	880502	165984	SILVERSIDES	Atherinidae	SILVERSIDES
3650	3650	871304	160845	SKATES	Rajidae	SKATES
3651		8713020201	160824	SKATE,THORNBAC	Platyrrhinoidis triseriata	THROWBACK
3652	3670	8713040103	160848	SKATE,BIG	Raja biloculate	SKATE, BIG
3653		8713040104	160849	SKATE,CALIFORNIA	Raja in ornata	SKATE, CALIFORNIA
3654	3660	8713040114	160856	SKATE,LITTLE	Raja erinacea	SKATE, LITTLE
3655	3680	8713040115	160857	SKATE,BARNDOR	Raja laevis	SKATE, BARNDOR

3680		88030203	165570	SKIPPERS	Tylosurus	SKIPPERS
3710	3710	8755030302	162041	SMELT,RAINBOW (AT)	Osmerus mordax	SMELT, RAINBOW
3731		8755030501	162051	SMELT,EULACHON	Thaleichthys pacificus	EULACHON
3732		875503	162028	SMELTS	Osmeridae	SMELTS
3733		8755030101	162030	SMELT,SURF	Hypomesus pretiosus	SMELT, SURF
3734		8755030401	162048	SMELT,NIGHT	Spirinchus stearnsi	SMELT, NIGHT
3735		8755030601	162053	SMELT,WHITEBAIT	Allomerous elongatus	SMELT, WHITEBAIT
3754	3754	8835360109	168857	SNAPPER,DOG	Lutjanus jock	SNAPPER, DOG
3755		8835360201	168899	SNAPPER,BLACK	Apsilus dentatus	SNAPPER, BLACK
3756		8835360701	168913	HENCHMAN	Pristipomoides aquilonaris	HENCHMAN
3757		8835360106	168852	SNAPPER,BLACKFIN	Lutjanus bacchanalia	SNAPPER, BLACKING
3758		8835360113	168861	SNAPPER,SILK	Lutjanus vivanus	SNAPPER, SILK
3759		8835360101	168847	SNAPPER,CUBERA	Lutjanus Cynopterus	SNAPPER, CUBEBA
3760		8835360102	168848	SNAPPER,GRAY AT (MANGROVE)	Lutjanus griseus	SNAPPER, GRAY
3761		8835360112	168860	SNAPPER,LANE	Lutjanus synagris	SNAPPER, LANE
3763		8835360103	168849	SNAPPER,MUTTON	Lutjanus analis	SNAPPER, MUTTON
3764	3764	8835360107	168853	SNAPPER,RED	Lutjanus campechianum	SNAPPER, RED
3765		8835360501	168909	SNAPPER,VERMILION	Rhomboplites atrorubens	SNAPPER, VERMILION
3767		8835360401	168907	SNAPPER,YELLOWTAIL	Ocyurus chrysurus	SNAPPER, YELLOWTAIL
3768		883536	168845	SNAPPERS,UNC	Lutjanidae	SNAPPERS
3769		8835360801	168926	SNAPPER,JOBFISH or UK	Apron virescent	JOBFISH, GREEN (HAWAIIAN)
3770		8835360301	168902	SNAPPER,QUEEN	Stelis ocellatus	SNAPPER, QUEEN
3771		8835360104	168850	SNAPPER,SCHOOLMASTER	Lutjanus apodus	SCHOOLMASTER
3772		8835360110	168858	SNAPPER,MAHOGONY	Lutjanus mahogani	SNAPPER, MAHOGANY
3777		8835360501	168909	SNAPPER,VERMILION	Rhomboplites atrorubens	SNAPPER, VERMILION
3780		8835360111	168859	SNAPPER,CARIBBEAN RED	Lutjanus purpureus	SNAPPER CARIBBEAN RED
3790		8835010105	167648	SNOOK	Centropomus undecimalis	SNOOK
3810	3810	883552	169537	SPADEFISH	Ephippidae	SPADEFISHES
3840	3840	8850030502	172436	SPANISH MACKEREL	Scomberomorus maculatus	MACKEREL, SPANISH
3841		8850030504	172438	GULF SIERRA	Scomberomorus concolor	GULF SIERRA
3870		8747011001	161763	SPANISH SARDINE	Sardinella aurita	SARDINE, SPANISH
4000		88500603	172498	SPEAR FISHES	Tetrapturus	SPEAR FISHES
4009		8850060303	172501	SPEARFISH,ROUNDSCALE	Tetrapturus George	SPEARFISH, ROUND SCALE
4010		8850060304	172502	SPEARFISH,LONGBILL	Tetrapturus pfluegeri	SPEARFISH, LONG BILL
4030		8776013902	163603	SPRIGTAIL	Pogonichthys microlepidotus	SPRIGTAIL
4060	4060	8835440401	169267	SPOT	Leiostomus xanthurus	SPOT
4090		87760118	163522	SQUAWFISH ES	Ptychocheilus	SQUAWFISH ES
4120		881008	166170	SQUIRRELFISHES	Holocentridae	SQUIRRELFISHES
4180	4180	8835750202	167680	STRIPED BASS	Morone saxatilis	BASS, STRIPED
4211		872901	161064	STURGEONS,UNC	Acipenseridae	STURGEONS
4212		8729010202	161082	STURGEON,SHOVELNOSE	Scaphirhynchus platyrhynchus	STURGEON, SHOVELNOSE
4213		8729010102	161067	STURGEON,GREEN	Acipenser medirostris	STURGEON, GREEN
4214		8729010103	161068	STURGEON,WHITE	Acipenser transmontanus	STURGEON, WHITE
4215	4220	8729010104	161069	STURGEON,SHORTNOSE	Acipenser brevirostrum	STURGEON, SHORTNOSE
4216	4200	8729010105	161070	STURGEON,ATLANTIC	Acipenser oxyrinchus	STURGEON, ATLANTIC
4230	4230	877604	163892	SUCKERS	Catostomidae	SUCKERS

4260	4260	883516	168093	SUNFISHES	Centrarchidae	SUNFISHES
4263		8861040101	173414	SUNFISH,OCEAN	mola	OCEAN SUNFISH
4265		884901	172250	SURGEON FISHES	Acanthuridae	SURGEON FISHES
4290	4290	88610102	173289	PUFFERS	Spheroidea	PUFFERS
4320	4320	8850040101	172482	SWORDFISH	Xiphias gladius	SWORDFISH
4350	4350	8738020201	161116	TARPON	MELANOPS atlanticus	TARPON
4380	4380	8839010101	170479	TAUTOG	Tautoga onitis	TAUTOG
4410		8738010101	161111	TENPOUNDER	Elops saurus	LADYFISH
4411		8738010103	161113	TENPOUNDER (TARPON,HAWAIIAN)	Elops Hawaii Ensis	TARPON, HAWAIIAN
4450		883801	170445	THREADFIN	Polynemidae	THREADFIN
4460		88356104	169809	TILAPIA	Tilapia	TILAPIA
4470	4470	8835220201	168546	TILEFISH	Lopholatilus chamaeleonticeps	TILEFISH
4472		8835220105	168544	TILEFISH,GOLDFACE	Caulolatilus chrysops	TILEFISH, BOLDFACE
4474		8835220104	168543	TILEFISH,BLUELINE	Caulolatilus microns	TILEFISH, BLUELINE
4475	4472	8835220201	168546	TILEFISH,MEDIUM	Lopholatilus chamaeleonticeps	TILEFISH
4476		8835220102	168541	TILEFISH,BLACKLINE	Caulolatilus canapes	TILEFISH, BACK-LINE
4478		8835220301	168548	TILEFISH,SAND	Malacanthus plumieri	TILEFISH, SAND
4479		8835220103	168542	TILEFISH, ANCHOR	Caulolatilus intermedium	TILEFISH, ANCHOR
4480		883522	168537	TILEFISH,UNCLASSIFIED	Malacanthidae	TILEFISHES
4500	4510	878301	164412	TOADYISH	Batrachoididae	TOADYISH
4530	4530	8791030602	164720	TOM COD,ATLANTIC	Microgauss tomcat	TOMCAT, ATLANTIC
4531		8791030601	164719	TOMCOD,PACIFIC	Microgauss proximus	TOMCAT, PACIFIC
4560	4560	886002	173128	TRIGGER FISHES	Balistidae	LEATHERJACKET
4561		8860020201	173138	TRIGGERFISH,GRAY	Balistes caprices	TRIGGERFISH, GRAY
4562		8860020502	173170	TRIGGERFISH,OCEAN	Canthidermis sufflamen	TRIGGERFISH, OCEAN
4563		8860020202	173139	TRIGGERFISH,QUEEN	Balistes vetula	TRIGGERFISH, QUEEN
4590	4590	8835380101	169007	TRIPLETAIL	Lobotes surinamensis	TRIPLETAIL
4651	4701	8850030401	172419	TUNA,ALBACORE	Thunnus alalunga	TUNA, ALBACORE
4652	4670	8850030402	172421	TUNA,BLUEFIN,UNC	Thunnus thynnus	TUNA, BLUEFIN
4653	4681	8850030102	172402	TUNA,LITTLE (TUNNY)	Euthynnus aliterates	LITTLE TUNNY
4654	4661	8850030101	172400	TUNA,SKIPJACK	Euthynnus pelamis	TUNA, SKIPJACK
4655	4711	8850030403	172423	TUNA,YELLOWFIN	Thunnus albacares	TUNA, YELLOWFIN
4656	4657	88500304	172418	TUNA,UNC	Thunnus	TUNA,UNC
4657	4691	8850030405	172428	TUNA,BIGEYE	Thunnus obesus	TUNA, BIGEYE
4658	4641	8850030404	172427	TUNA,BLACKFIN	Thunnus atlanticus	TUNA, BLACKING
4659		8850030103	172403	TUNA,KAWAKAWA	Euthynnus affinis	KAVAKAVA
4660		8850030104	172405	TUNA,BLACK SKIPJACK	Euthynnus lineatus	TUNA,BLACK SKIPJACK
4661		8850030406	172430	TUNA,LONGTAIL	Thunnus Tangail	TUNA, LONGTAIL
4671	4671	8850030402	172421	TUNA,BLUEFIN	Thunnus thynnus	TUNA, BLUEFIN
4679	1580	8857041801	172930	GREENLAND TURBOT	Reinhardtius Hippoglossoides	HALIBUT, GREENLAND
4681		885704	172859	TURBOTS,UNC	Pleuronectidae	RIGHTEYE FLOUNDERS
4682		8857041603	172925	TURBOT,SPOTTED	Pleuronichthys Ritter	TURBOT,SPOTTED

4683		8857041604	172926	TURBOT,HORNYHEAD	Pleuronichthys vertical is	TURBOT, THORNYHEAD
4684		8857042201	172945	TURBOT,DIAMOND	Hypsopsetta guttulata	TURBOT, DIAMOND
4710	4720	8850030601	172451	WAHOO	Acanthocybium solandri	WAHOO
4740		8835020410	167704	GROUPER,WARSAW	Epinephelus nitrites	GROUPER, WARSAW
4800		8776012301	163537	GRASS CARP	Ctenopharyngodon Della	CARP, GRASS
5000		8835750204	167682	WHITE BASS,FW	Morone chrysops	BASS, WHITE
5031		8755010106	161941	WHITEFISH,COMMON	Coregonus clupeaformis	WHITEFISH, LAKE
5035		8755010601	162008	WHITEFISH,MENOMINEE	Prosopium cylindraceum	WHITEFISH, ROUND
5040		8835220101	168540	WHITEFISH,OCEAN	Caulolatilus princeps	OCEAN WHITEFISH
5060	5060	8835750201	167678	WHITE PERCH	Morone americana	PERCH, WHITE
5070	5070	87910401	164790	HAKE,SILVER/OFFSHORE MIXED	Merluccius	HAKE,SILVER/OFFSHORE MIXED
5080	5080	8791040103	164793	HAKE,OFFSHORE UNC (WHITING,BLACK)	Merluccius albidus	HAKE, OFFSHORE SILVER
5090	5090	8791040101	164791	HAKE,SILVER UNC (WHITING)	Merluccius bilinearis	HAKE, SILVER
5120	5120	8842020103	171341	WOLFFISH,ATLANTIC	Anarhichas lupus	WOLFFISH, ATLANTIC
5126		8842020201	171345	WOLFFISH,PACIFIC	Anarrhichthys ocellatus	WOLF-EEL
5131	5130	8835022801	167914	WRECKFISH	Polyprion americanus	WRECKFISH
5150		8835750205	167683	YELLOW BASS	Morone mississippiensis	BASS, YELLOW
5170	5170	8835200201	168469	YELLOW PERCH	Perca flavescens	PERCH, YELLOW
5190		883520040102	168508	YELLOW PIKE	Stizostedion vitreum	WALLEYE
5230		8835280806	168695	YELLOWTAIL,PACIFIC	Seriola Leland	YELLOWTAIL
5260	5260	8717	161030	FINFISH ES, MARLIN,UNC	Osteichthyes	FINFISHES,UNC FOR FOOD
5510		87770201	163996	CATFISH,AQUACULTURE	Ictalurus	CATFISHES & BULLHEADS
5530		8755010306	161997	TROUT,BROWN,AQUACULTURE	Salmo trutta	TROUT, BROWN
5531		8755010404	162003	TROUT,BROOK,AQUACULTURE	Salvelinus fontinalis	TROUT, BROOK
5532		8755010211	161989	TROUT,RAINBOW,AQUACULTURE	Oncorhynchus mykiss	TROUT, RAINBOW
5580		8755010206	161980	SALMON,KING,AQUACULTURE	Oncorhynchus tshawytscha	SALMON, CHINOOK
5581		8755010202	161976	SALMON,CHUM,AQUACULTURE	Oncorhynchus keta	SALMON, CHUM
5582		8755010201	161975	SALMON,PINK,AQUACULTURE	Oncorhynchus gorbuscha	SALMON, PINK
5583		8755010205	161979	SALMON,SOCKEYE,AQUACULTURE	Oncorhynchus nerka	SALMON, SOCKEYE
5584		8755010203	161977	SALMON,COHO,AQUACULTURE	Oncorhynchus kisutch	SALMON, COHO
5585		8755010208	161983	TROUT,CUTTHROAT,AQUACULTURE	Oncorhynchus clarki	TROUT, CUTTHROAT
5586		8755010305	161996	SALMON,ATLANTIC,AQUACULTURE	Salmo salar	SALMON, ATLANTIC
5587		875501	161931	SALMON,UNC,AQUACULTURE	Salmonidae	TROUTS
6000		6104010101	083691	BRINE SHRIMP EGGS	Artemia salina	BRINE SHRIMP
7000	7000	6189010301	098696	CRABS,BLUE,HARD	Callinectes sapidus	CRAB, BLUE
7060		6188030104	098675	CRAB,DUNGENESS	Cancer magister	CRAB, DUNGENESS
7080	7080	6189010701	098734	CRAB,GREEN	caprinus maenad	CRAB, GREEN
7082		6188020201	098665	CRAB,HAIR	Erinaceus isenbeckii	CRAB, HAIR
7090		61830807	097934	CRAB,KING	Paralithodes	CRAB,KING
7091		6183080801	097941	CRAB,GOLDEN KING	Litotes aequispina	CRAB, GOLDEN KING
7100	7100	6189040101	098906	CRAB,RED AT	Gorin coincidence	CRAB, DEEP-SEA RED
7101		6189010801	098737	CRAB,RED PA	Podophthalmus vigil	CRAB,RED PA
7102		6189040104	098909	CRAB,GOLDEN	Gorin fawner	CRAB, DEEP-SEA GOLDEN
7110	7110	6188030107	098678	CRAB,JONAH	Cancer borealis	CRAB, JONAH
7120	7120	6188030108	098679	CRAB,ATLANTIC,ROCK	Cancer irroratus	CRAB, ATLANTIC ROCK

7140	7140	61880301	098671	CRAB,CANCER S.P. UNC	Cancer	CRAB,CANCER
7150		6188030101	098672	CRAB,PACIFIC,ROCK PA	Cancer productus	CRAB, RED ROCK
7176		6189021301	098811	CRAB,STONE	Menippe mercenaria	CRAB, FLORIDA STONE CLAWS
7183		6187010301	098428	CRAB,SNOW,OPILIO	Canachites opilio	CRAB, SNOW
7184		6187010302	098429	CRAB,SNOW,BAIRDI	Canachites Baird	CRAB, SOUTHERN TANNER
7185	7185	61870103	098427	CRAB,SNOW (TANNER) CRAB,SPIDER	Canachites Majidae	CRAB,SNOW (TANNER) 7187 618701 098417 SPIDER CRABS
7190	7130	6175	095599	CRAB,UNC	Decapoda	CRAB,UNC
7210	6181		097306	CRAWFISH,FW	Astacidae	CRAYFISHES OR CRAWFISHES
7240	7240	5802010101	082703	HORSESHOE CRAB	Limulus polyphemus	HORSESHOE CRAB
7270	7270	6181010201	097314	LOBSTER,AMERICAN	Homarus americanus	LOBSTER, AMERICAN
7280		618202	097660	LOBSTER,SLIPPER(BULLDOZER)	Scyllaridae	LOBSTER, SLIPPER
7298		6182010107	199949	LOBSTER,PRONGHORN SPINY	Panulirus penicillatus	LOBSTER, PRONGHORN SPINY
7300		6182010101	097648	LOBSTER,SPINY	Panulirus argus	LOBSTER, CARIBBEAN SPINY
7302		6104010101	083691	SHRIMP,BRINE	Artemia salina	BRINE SHRIMP
7303		618304	097732	SHRIMP,GHOST (SAND)	Colonized	GHOST SHRIMP
7304		6183170101	098208	SHRIMP,SAND PACIFIC (BLUE MUD)	Upogebia pugettensis	SHRIMP, BLUE MUD
7305		61791102	096220	SHRIMP,FW	Macro brachium	SHRIMP,FW
7310	7380	6177010101	095605	SHRIMP,ATLANTIC & GULF,BROWN	Peneus Aztecs	SHRIMP, BROWN
7320		6177010102	095608	SHRIMP,ATLANTIC & GULF,PINK	Peneus duorarum	SHRIMP, PINK
7321		6177010104	095612	SHRIMP,ATLANTIC & GULF,PINKSPOT	Peneus brasiliensis	SHRIMP, PINKSPOT
7325		61770401	096027	SHRIMP,ROCK	Sechuana	ROCK SHRIMPS
7330		6177030301	095966	SHRIMP,ATLANTIC & GULF, ROYAL RED	Pleoticus robustus	SHRIMP, ROYAL RED
7338		6177010701	095750	SHRIMP,ATLANTIC & GULF, SEA BOBS	Xiphopenaeus Crary	SEABOB
7339		61770102	095647	SHRIMP,ATLANTIC & GULF, ROUGHNECK	Trachypenaeus	SHRIMP,ATLANTIC & GULF, ROUGHNECK
7340		6177010103	095610	SHRIMP,ATLANTIC & GULF,	Peneus setiferum	SHRIMP, WHITE
7350		6177010804	095759	SHRIMP,PINK-SPECKLED	Penaeopsis serrata	PINK-SPECKLED SHRIMP
7355	7355	6177050501	096071	SHRIMP,SCARLET	Plesiopenaeus edwardsianus	SCARLET SHRIMP
7360	7360	6179180101	096967	SHRIMP,ATLANTIC & GULF, MARLIN,UNC	Pandanus borealis	SHRIMP, NORTHERN
7370		617922	097106	SHRIMP,PACIFIC,BAY	Crangonidae	SHRIMP, BAY
7373		6179180106	096981	SHRIMP,COONSTRIPE	Pandanus hypsinotus	COONSTRIPE SHRIMP
7374		6179180204	096995	SHRIMP,SIDESTRIPE	Pandalopsis dispar	SIDE STRIPE SHRIMP
7375		6179180103	096970	SHRIMP,PACIFIC,OCEAN	Pandanus jordani	SHRIMP, OCEAN
7377		6177040109	096038	SHRIMP,RIDGEBACK	Sechuana indents	SHRIMP, PACIFIC ROCK
7378		6179180105	096979	SHRIMP,SPOT	Pandanus platy ceros	SHRIMP, SPOT
7381		6176	095600	SHRIMP,MARINE,OTHER	Decapoda, Dendrobranchiata	SHRIMP,MARINE,OTHER
7385	7370	6191	099140	MANTIS SHRIMPS	Stomatopoda	MANTIS SHRIMPS
7390		510203	069492	ABALONE,UNC	Haliotidae	ABALONE
7391		5102030113	069508	ABALONE,THREADED	Haliotis tuberculata	ABALONE,THREADED

7392		5102030101	069494	ABALONE,PINTO	<i>Haliotis kamtschatkana</i>	ABALONE,PINTO
7393		5102030102	069497	ABALONE,RED	<i>Haliotis rufescens</i>	ABALONE,RED
7394		5102030103	069498	ABALONE,BLACK	<i>Haliotis cracherodii</i>	ABALONE,BLACK
7395		5102030104	069499	ABALONE,PINK	<i>Haliotis corrugate</i>	ABALONE,PINK
Table A.8 (cont'd).						
7396		5102030105	069500	ABALONE,GREEN	<i>Haliotis fulgens</i>	ABALONE,GREEN
7397		5102030106	069501	ABALONE,FLAT	<i>Haliotis walallensis</i>	ABALONE,FLAT
7398		5102030107	069502	ABALONE,WHITE	<i>Haliotis sorenseni</i>	ABALONE,WHITE
7399		6182010103	097650	LOBSTER,CALIFORNIA SPINY	<i>Panulirus interruptus</i>	LOBSTER, CALIFORNIA SPINY
7420		5515220102	080873	CLAMS,PACIFIC,COCKLE	<i>Clinocardium nuttallii</i>	COCKLE, NUTTALL
7430	7430	5506010202	079342	CLAM,BLOOD ARC	<i>Unitary ovalis</i>	CLAM, ARC, BLOOD
7450		5515320103	081248	CLAM,COQUINA	<i>Donax variabilis</i>	CLAM, VARIABLE CHICANE
7471		55154711	081495	CLAM,BUTTON	<i>Mercenaria</i>	CLAM,QUAHOG
7483		5515470201	081447	CLAM,PACIFIC,BUTTER	<i>Saxidomus giganteus</i>	CLAM, BUTTER
7484		55152502	080954	CLAM,PACIFIC,GAPER	<i>Tress</i>	CLAM,PACIFIC,GAPER
7486		5515470701	081464	CLAM,PACIFIC,LITTLENECK	<i>Protothaca Sabinea</i>	CLAM, PACIFIC LITTLENECK
7488	7488	5515471101	081496	CLAM,NORTHERN QUAHOG	<i>mercenaria</i>	CLAM, NORTHERN QUAHOG
7489		5515450201	081386	CLAM,PACIFIC,MANILA	<i>Curricula manilensis</i>	CLAM, MANILA
7490		55154711	081495	CLAM,OFFSHORE,HARD,PUBLIC	<i>Mercenaria</i>	CLAM,QUAHOG
7500		5517060401	081777	CLAM,GEODUCK	<i>Panopea generis</i>	CLAM, PACIFIC GATWICK
7510	7481	55154711	081495	CLAM,HARD	<i>Mercenaria</i>	CLAM,QUAHOG
7520		5515471802	081579	CLAM,SUNRAY VENUS	<i>Macrocallista nimbosa</i>	CLAM, SUNRAY VENUS
7540	7540	5515390101	081343	CLAM,OCEAN QUAHOG	<i>Arctica islandica</i>	CLAM, OCEAN QUAHOG
7570		5515472002	081584	CLAM,PISMO	<i>Tuvalu stultorum</i>	CLAM, PISMO
7590		5515250401	080962	CLAM,RANGIA	<i>Range cuneata</i>	CLAM, ATLANTIC RANGE
7600	7600	5515290301	081022	CLAM,RAZOR,ATLANTIC	<i>Ensis directus</i>	CLAM, ATLANTIC JACKKNIFE
7605		5515290101	081008	CLAM,RAZOR,PACIFIC	<i>Siliqua patula</i>	CLAM, PACIFIC RAZOR
7610		5515290204	081019	CLAM,ROSY JACKKNIFE	<i>Soled rosaceus</i>	CLAM,ROSY JACKKNIFE
7630	7630	5517010201	081692	CLAM,SOFT	<i>Mya arenaria</i>	CLAM, SOFTSHELL
7650	7650	5515251001	080983	CHAR,ARCTIC SURF (SIMPSON)	<i>Mactromeris polynyma</i>	CHAR,ARCTIC SURF (SIMPSON)
7690	7690	5515250102	080944	CLAM,SURF	<i>Spirula solidissima</i>	CLAM, ATLANTIC SURF
7720	7640	55	079118	CLAM,UNC	<i>Bivalvia</i>	CLAMS OR BIVALVES
7721		5515290306	081027	CLAM,CALIFORNIA JACKKNIFE	<i>Ensis Myra</i>	CALIFORNIA JACKKNIFE
7750	7750	51035801	072555	SNAILS(CONCHS)	<i>Strombus</i>	SNAILS(CONCHS)
7751	7770	5105070101	074071	WHELK,KNOBBED	<i>Busycon carica</i>	WHELK, KNOBBED
7752	7780	5105070103	074075	WHELK,LIGHTNING	<i>Busycon sinistrum</i>	WHELK, LIGHTNING
7753	7760	5105070201	074096	WHELK,CHANNELED	<i>Busycotypus canaliculatus</i>	WHELK, CHANNELED
7780		510204	069510	LIMPETS	<i>Fissurellidae</i>	LIMPETS
7810	7810	5507010101	079454	MUSSEL,SEA	<i>Mytilus edulis</i>	MUSSEL, BLUE
7811		5507010102	079455	MUSSEL,CALIFORNIA	<i>Mytilus californianus</i>	MUSSEL, CALIFORNIA
7830		551202	079913	MUSSELS,MUSSELS SHELLS,FW	<i>Unionidae</i>	MUSSELS,FW



7831		551202	079913	MUSSELS,FW,PEARLS&SLUGS	Unionidae	MUSSELS,FW
7860	7860	570801	082590	OCTOPUS	Octopodidae	OCTOPUS
7890	7890	5510020102	079872	OYSTER,EASTERN	Crass Ostrea virginica	OYSTER, EASTERN
7920		5510020101	079868	OYSTER,PACIFIC	Crass ostrea gigas	OYSTER, PACIFIC
7921	7921	5510020205	079885	OYSTER,EUROPEAN FLAT	Ostrea edulis	OYSTER, EUROPEAN FLAT
7950		5510020501	079895	OYSTER,OLYMPIA	Astrally conchaphila	OYSTER, OLYMPIA
7980	7980	510310	070394	PERIWINKLES,ATLANTIC	Littorinidae	PERIWINKLES
8001	7990	5509051202	079737	SCALLOP,BAY	Argopecten irradians	SCALLOP, BAY
Table A.8 (cont'd).						
8005	7970	5509051201	079734	SCALLOP,CALICO	Argopecten gibbous	SCALLOP, CALICO
8007	7950	5509050103	079619	SCALLOP,ICELANDIC SEA	Chlamys islandica	SCALLOP, ICELAND
8009	8009	5509050901	079718	SCALLOP,SEA	Placopecten magellanicus	SCALLOP, SEA
8011		5509051501	079757	SCALLOP,WEATHERVANE	Patinopecten caurinus	SCALLOP, WEATHERVANE
8013		5509050101	079613	SCALLOP,SPINY	Chlamys hastate	SCALLOP, SPINY
8015	7960	550905	079611	SCALLOP,UNC	Pectinidae	SCALLOPS
8030	8030	570601	082369	SQUIDS,UNC	Loliginidae	SQUID
8031	8020	5707150301	082521	SQUID,SHORT-FINNED	Ilex illecebrosus	SQUID, NORTHERN SHORTFIN
8032	8010	5706010102	082372	SQUID,LONG FINNED	Loligo pealeii	SQUID, LONGFIN
8033		5706010101	082371	SQUID,CALIFORNIA MARKET	Loligo opalescent	SQUID, CALIFORNIA MARKET
8034		5707150501	082538	SQUID,JUMBO MARKET	Dosidicus gigas	SQUID, JUMBO
8040	8040	5085	069458	MOLLUSKS,UNC	Mollusca	MOLLUSKS,UNC
8050	8050	81490302	157968	SEA URCHINS	Strongylocentrotus	SEA URCHINS
8055	81		156857	ECHINODERM	Echinodermata	ECHINODERM
8081	8081	9002030301	173780	TERRAPIN	Malaclemys terrapin	TURTLE, TERRAPIN
8085	8060	8170	158140	SEA CUCUMBER	Holothuroidea	SEA CUCUMBER
8090	84		203347	TUNICATE	Urochordata	SEA SQUIRTS
8111		90020304	173782	TURTLES,BABY(YOUNG FRESH WATER	Chrysemys	TURTLES,BABY(YOUNG FRESH WATER
8112	8090	9002040201	173833	TURTLE,GREEN(SEA)	Chelonia mydas	TURTLE, GREEN SEA
8113		9002040301	173836	TURTLE,HAWKSBILL(SEA)	Eretmochelys imbricata	TURTLE, HAWKSBILL SEA
8114	8130	9002040101	173830	TURTLE,LOGGERHEAD(SEA)	caretta	TURTLE, LOGGERHEAD SEA
8115	8110	90020308	173803	TURTLES,SLIDERS	Pseudemys	TURTLES,SLIDERS
8116	8150	9002010101	173752	TURTLES,SNAPPING	Chelydra serpentina	TURTLES,SNAPPING
8117		90020601	173846	TURTLES,SOFT-SHELL	Trionyx	TURTLES,SOFT-SHELL
8118		9002050101	173843	TURTLES,LEATHERBACK	Dermochelys coriacea	TURTLE, LEATHERBACK
8119		9002040401	173839	TURTLES,KEMP'S RIDLEY	Lepidochelys kemp	TURTLE, KEMP'S RIDLEY
8120	8160	9001	173748	TURTLES,UNC	ANAPSIDA	TURTLES,UNC
8140		890302	173433	FROGS	Ranidae	FROGS
8145		3730	051483	JELLYFISH,UNC	Scyphus	JELLYFISH,UNC
8160		3740	051938	CORALS	Anthozoa	CORALS
8171	8171	1608100101	012092	CETERACH MOSS	Chondrus crispus	SEA WEED, IRISH MOSS
8172		15080302	011272	SEAWEED,KELP	Macrocystis	SEAWEED,KELP
8173		1510010101	011331	SEAWEED,ROCKWEED	Ascophyllum nodosum	SEAWEED,ROCKWEED
8178		15	010685	SEAWEED,UNC	Phaeophyta	SEAWEED,UNC

8179		874701020101	161723	SEAWEED,KELP WITH HERRING ROE	<i>Clupea harengus pallasii</i>	HERRING, PACIFIC, ROE ON KELP
8200		36	046861	SPONGE,UNC	Porifera	SPONGE,UNC
8201		3661010107	196435	SPONGE,GLOVE	<i>Spongia cheiri</i>	SPONGE,GLOVE
8202		3661010108	196436	SPONGE,GRASS	<i>Spongia grained</i>	SPONGE,GRASS
8203		3661011902	196440	SPONGES,SHEEPSWOOL	<i>Hippo spongia Lachine</i>	SPONGES,SHEEPSWOOL
8204		3661010109	196437	SPONGE,WIRE	<i>Spongia stereo</i>	SPONGE,WIRE
8205		3661010106	196434	SPONGE,YELLOW	<i>Spongia barbara</i>	SPONGE,YELLOW
8230	8230	5001270105	066107	BLOODWORMS	<i>Glyceria Dibranchiata</i>	BLOODWORMS
8250	8250	50012404	065902	SANDWORMS	Nereid	SANDWORMS
8260	5001		064358	MARINE WORM	Polychaeta	MARINE WORM
8280	8280	811703	157212	STARFISH	Asteridae	STARFISH
9001		9217	180403	WHALE	Cetacea	WHALES,UNC
9007		9009020101	174367	ALLIGATOR	<i>Alligator mississippiensis</i>	ALLIGATOR, AMERICAN
9010		92	179913	MAMMALS,AQUATIC,UNC	Mammalia	MAMMALS,AQUATIC,UNC
9030		9221010601	180627	FUR SEAL	<i>Callorhinus ursinus</i>	SEAL, NORTHERN FUR
9106	9990	61	083677	SHELLFISH,SW,UNC	Crustacea	SHELLFISH,UNC
9560		617701	095602	SHRIMP AQUACULTURE	Penaeidae	PAINED SHRIMP
9990	8990	61	083677	SHELLFISH,OTHER	Crustacea	SHELLFISH,UNC

**Table A.9 FIN Sex and sex stage codes.**

SEX	
Code	Description
M	Male
F	Female
U	Unknown
STAGE	
Code	Description
1	<u>Virgin</u> : Very Small sexual organs close under the vertebral column. Testis and Ovary transparent, colorless to grey. Eggs visible to naked eye.
2	<u>Maturing virgin and recovering spent</u> : Testis and ovary translucent, grey-red. Length half(or slightly more than half) the length of the ventral cavity. Single eggs can be seen with magnifying glass.
3	<u>Developing</u> : Testis and ovaries opaque, reddish with blood capillaries. Occupy about half of ventral cavity. Eggs visible to the eye as whitish granular.
4	<u>Developed</u> : Testis reddish-white. No milt drops appear under pressure. Ovary orange-reddish. Eggs clearly discernible and opaque. Testis and ovary occupy about two-thirds of central cavity.
5	<u>Gravid</u> : Sexual organs filling ventral cavity. Testis white, drops of milt fall with pressure. Eggs completely round, some already translucent to ripe.
6	<u>Spawning</u> : Roe and milt run with slight pressure. Most eggs translucent with few opaque eggs left in ovary.
7	<u>Spent</u> : Ovary or testis not yet fully empty. No opaque eggs left in ovary.
8	<u>Resting</u> : Testis and ovary empty, red. A few eggs in the ovary may be present.

OK

JKR 10/99

**DRAFT**

**MINUTES**

**GULF OF MEXICO FISHERY MANAGEMENT COUNCIL**

**TEXAS HABITAT PROTECTION ADVISORY PANEL**

**HOUSTON, TEXAS**

**TUESDAY, SEPTEMBER 21, 1999**

**ATTENDANCE**

**Members:**

Dana Larson  
Russell Miget  
Burt Moritz  
James Bergan  
Rusty Swafford  
Fred Werner  
John Green  
Frank Fisher  
Don Perkins

Rigs to Reefs Company  
Texas Sea Grant College Program  
Dow Chemical  
The Nature Conservancy of Texas  
NMFS  
USFWS

Rice University

**Staff:**

Jeffrey Rester  
Cheryl Noble

Gulf States Marine Fisheries Commission  
Gulf States Marine Fisheries Commission

**Others:**

Pete Aparicio  
Gary Valentine  
Mark Muttich  
LaVonne Walker  
Calvin Walker  
Dick Myers  
Dale Shively  
Lance Robinson  
Heather Young  
Donald Moore  
Ed Seidensticker  
Dalton Krueger  
Jan Culbertson

Gulf of Mexico Fishery Management Council  
USDA-NRCS  
Galveston Daily News  
San Leon, Bacliffe, Bayview Chamber of Commerce  
San Leon, Bacliffe, Bayview Chamber of Commerce  
Boise Cascade Corporation  
TPWD  
TPWD  
NMFS  
  
USDA-NRCS  
USCOE  
TPWD

George Clark  
Sammy Ray  
Moni DeVora  
Muriel Tipps  
Billie Clays  
Sharon Tirpak

Lunar Sins Scuba Dive Club  
Texas A&M  
USFWS  
Sargent Chamber of Commerce  
Sargent Chamber of Commerce  
USCOE

### **Call to Order and Introduction of Advisory Panel Members**

Chairman B. Baker called the meeting to order at 9:05 and asked AP members and guests to introduce themselves.

### **Adoption of Agenda**

The agenda was adopted without objection as written.

### **Approval of Minutes**

The minutes from the June 30, 1998 meeting were approved without objection as written.

### **Expansion of the Houston Ship Channel in Galveston Bay**

D. Kruger gave a presentation on the mitigation for the expansion of the Houston Ship Channel in Galveston Bay. The Houston Ship Channel is being expanded in Galveston Bay to increase navigational safety and efficiency. The channel will be widened, and the depth will be increased to 45 feet. The dredge material from the expansion will be used to construct 4,500 acres of marsh. Three separate disposal areas will be created, and one area will be a refuge for birds. Some oysters will be impacted by the project, and 118 acres of oyster reef will be created as mitigation. The marsh and bird island creation are considered enhancements and not mitigation. D. Kruger stated that the dredging will take place in several different areas at different times. Some of the dredging has already started.

R. Miget asked how the oyster reef is being created. D. Kruger stated that it will be constructed out of limestone that is about the size of cereal. D. Larson asked if the project was environmental enhancement or mitigation? D. Kruger stated that just the oyster reefs are considered mitigation. The marsh and bird island are environmental enhancement. D. Larson asked what would happen if a hurricane destroys the disposal areas; will the Port of Houston continue to maintain the areas? D. Kruger stated that he anticipates that the rock levees will protect the areas to a certain degree. It depends on when the damage is done. If it is during the construction phase, it will be repaired by the Corps of Engineers. The Port of Houston has agreed to maintain the areas for 50 years.

J. Bergen wanted to know the number of acres of oysters impacted. D. Kruger stated that 118 acres will be impacted, and the mitigation ratio is one to one. R. Miget wanted to know how often maintenance dredging will have to be conducted in the channel. D. Kruger stated that some areas will have to be dredged every nine months, but other areas would average three to five years. D. Larson expressed his concern over whether the Port of Houston will live up to its promises of continuing to maintain the newly created areas.

### **Presentation on a New Wetland Restoration Technique**

E. Seidensticker gave a presentation on a wetland restoration technique that was used by Reliant Energy on their private property on Clear Creek near Webster, Texas. The project used dredged material to restore nearby wetlands that had subsided and eroded. The water intake canal to the power plant had silted in such that the plant could not take in water at low tide. The dredged material was pumped via pipeline into three different areas that were surrounded by a levee. An airboat was used to seed the area with marsh grass. Six different partners were involved in the project, which cost \$165,000. F. Werner asked about water quality approval. E. Seidensticker replied that water quality evaluations were reviewed, and they complied with water quality and sediment quality guidelines.

J. Bergan asked if the seed stock was native or a new variety. E. Seidensticker replied that it was an improved variety that was disease resistant and had superior plant growth. B. Baker wanted to stress the importance of the geo-technical work that went into the project. The tidal range is so narrow that it is critical to make sure that the elevations are correct. He also wanted to stress that this was a demonstration project that showed that private companies can save money and restore the environment.

### **Informational Presentation on Artificial Reefs**

Through a videotape, Ron Lukens gave an informational presentation on artificial reefs. This video was originally produced by Chevron for presentation to the government of Angola, Africa. The video described the use of artificial reefs in America, current technology used in reef building, the latest science on artificial reefs, and the guidelines that should be used in the deployment of artificial reefs.

D. Larson stated that the I-45 causeway bridge will be removed in the next three to five years. He would like to see this bridge become the world's largest and best artificial reef off Texas. He stated that if this opportunity is missed then the entire Gulf of Mexico will suffer because of it. He would like to see the Council become involved in this issue and make sure that the bridge is not sold for scrap. It should be turned into an artificial reef. He would like to see studies done that show the value of fishing and how much money the conversion of this bridge into an artificial reef would bring Texas. He would also like to see one full meeting dedicated to the issue of habitat enhancement.

F. Werner stated that legislation would have to be enacted to change the current ways that the Texas Department of Transportation deals with old structures that can be sold for scrap. J. Bergan raised the question of whether this type of artificial reef would actually create a situation where fishing mortality increased because it is easier for fishermen to catch the fish. D. Larson would like the Council to look into the I-45 causeway bridge and see what can be done to help convert the bridge into an artificial reef.

### **Revision of the Council's Habitat Policy and Procedures**

J. Rester stated that four documents need to be reviewed by the advisory panel: the GMFMC Habitat Policy and Responsibilities, GMFMC Habitat Procedures, GMFMC Wetland Management and Mariculture Policies, and the Council/NMFS Concurrence Paragraph. He said the first three were taken directly from the current Council Habitat Policy and he said when they started revising and updating it they felt it would be better to separate them into three different documents. He said the

Advisory Panel's input would be brought before the Council in November, and they, in turn, will review and make final changes.

J. Rester asked the panel to concur on suggestions that arise, and if the whole panel does not agree then list the name of the member who makes the suggestion.

### **Habitat Policy and Responsibilities**

F. Werner stated that if you dilute EFH by saying it is everything underwater, then it will not be of any value. EFH should be important fish habitat. If you say the bottom of the Houston ship channel is EFH then no one will pay attention, so the policy should refer to those areas that are most important. You can demonstrate that a particular open water area is very important for a particular grouper aggregation or spawning. If you can show the public those are the areas we are looking for, then you can sell the idea. Emphasize the importance or the uniqueness of a particular area that is to be protected. When Bill Jackson presented the concept, he talked about level 1, which is all the habitat used by fisheries. When there is not enough biological information to go to level 2 or 3, more sensitive habitats should be the focus instead of everything being considered essential.

D. Larson said he concurs and referred to the definition of EFH in the second paragraph, eighth line "and may include aquatic areas" suggests changing it to **normally or usually** include aquatic areas historically **required** (not used). This makes EFH special. Rester said the definition comes directly from the Magnuson-Stevenson Act, and there is no flexibility to alter it. D. Larson then asked to add **create** in the second paragraph, first line after "Protect, restore, and improve." **The whole panel concurred to add create.** Rester stated this shouldn't be a problem, because the passage is not part of the definition of EFH. D. Larson suggested changing "maintain" in 1. a. to **improve**. The advisory panel stated "b and c" covers that by stating "restore and rehabilitate."

D. Larson read "b," and said at the last meeting of the panel a lot of effort was devoted to discussing the impact of fishing activities on the fisheries. He added that Bill Jackson said they do not have enough information to determine or identify the adverse impacts of fishing (mainly gear) on fisheries. He then referred to the section of the minutes of the last meeting that discussed the issue and said the panel should ask that more steps be taken to determine the adverse effects of fishing gear impacts. Rester stated that a law suit dealing with the issue will be discussed under another agenda item.

D. Larson then referred to page 1, the last paragraph of the existing Current Habitat Policy and Procedures, which is highlighted. The Council Habitat Responsibilities were to minimize to the extent practicable adverse effects on such habitat caused by fishing. He then said if there is not a test or control area then there is not a baseline to measure the impact. He then asked how the problem will be solved.

R. Swafford asked how that relates to "1 a, b, c" that were being discussing. D. Larson said the policy is supported by three objectives and the "b" objective is to restore and rehabilitate the productive capacity of habitats that have already been degraded. So if it is not known what the damage or degradation has been, how can someone restore and rehabilitate it. R. Swafford stated there are a lot of coastal zone areas that have been identified and can be restored, such as areas that have been filled, prop scarred, etc. Right now the effects of bottom trawling are not known, nor is

it known what can be done to rehabilitate trawled areas. However, there are other areas that can be identified and restored. B. Baker said that there is an assumption of agreement that there has been degradation at a site, and the policy objective will be to restore and rehabilitate that area.

B. Moritz stated that some fishing techniques are detrimental in some areas. He added that such situations can be easily identified, for example using explosives on reefs to harvest reef fish or dragging longlines or anchor chains across known reefs. He feels that to set aside some areas as no fishing zones to compare with fishing zones would provide good data to address those issues. He said Texas' laws states that fishing gear must be approved, and must be judged not detrimental to the fishery. New gear cannot be introduced without first being approved.

R. Miget asked if the panel should be discussing inshore waters or should they concentrate on federal waters. Most of the discussion has been generic and addresses fisheries in state waters, where a lot of "detrimental activities" could take place or have taken place. He believes that they are already covered by state laws. Should the AP even be addressing state fisheries gear impacts? He feels the panel should be discussing areas that are in the Council's jurisdiction, and that it is nonproductive to discuss areas that are already being covered by the state. He added that the state is addressing activities that affect EFH in state waters, so the panel should be discussing federal waters in the Gulf of Mexico. B. Baker stated that the EFH definition does incorporate state waters. It is wherever EFH has been identified. The context of this habitat policy is state and federal waters. P. Aparicio said the Council does not have jurisdiction within territorial waters of the state, but they can certainly comment on any project. J. Green stated he thinks the Magnuson Act gives the Council the authority to impose federal regulations in state waters, if the state does not respond to concerns of the Council. The Council, however, has never taken that action.

Rester said the Council has the ability to comment on projects in state waters, but they have no authority in state waters. NMFS and the Council can comment on a project to a state agency, but the state agency is not required to follow their recommendations. If it is a federal agency dealing with a state waters issue, they then have to respond back to NMFS or the Council. If the activity is in federal waters, it will fall under the federal agency consultation process, so it will be covered. The Council does not have the authority to implement any type of regulation within state waters. Swafford stated that in the case of any federal permit, license, funding, etc. that could affect the EFH identified by the Council, the federal agency must consult with NMFS and the Council, and that is where the AP comes into play.

R. Miget stated that the use the phrases the document "this agency should" or "this agency would" or "this agency will" is confusing to people in trying to determine what is required. EFH provisions are different from normal provisions in FMPs, in that EFH designation includes the water column, quality of water, the sediment and what is in the sediment, the shoreline, the fringing area around the shoreline, etc. He said he does not think you can compare that necessarily with a management plan for a specific species. It would be better if specific issues could be cited, such as specific gear interactions, prop scarring, or other specific impacts instead of nebulous commenting about anything that is adverse. He feels that the nebulous language is confusing and frustrating. D. Shively stated that the language is establishing a policy, which does not have to deal in specifics. Such policy is providing guidelines and objectives to maintain, restore, and create habitat. When it is determined that restoration or rehabilitation is required, then step two is important. Step two states "activity -



the impacts of such activities to EFH or managed fisheries recommends appropriate action or response or consideration by the Council.” So the Habitat Protection Committee is basically identifying, making recommendations, and taking issues to the Council. The Council will then consider the recommendations and make final determinations. That is the time for specifics. He stated he did not follow the discussion, because it began with objectives and went off in another direction. B. Baker clarified that the AP stepped back to consider the overall reason for reviewing the document, and Mr. Larson had brought up a suggestion and had some questions about the policy as it regards to discussions last year at the last AP meeting.

D. Larson stated that when he started there were sixteen species of fish that were overfished, and now there are over sixty species overfished. He indicated that it means the problem is not being solved. The problem is getting worse. The Council has the responsibility of solving overfishing problems. It is frustrating because there does not appear to be a solution. He stated he is looking for better words, actions, and accomplishments. That is why he keeps going back to creation and enhancement, because positive action should be taken, and he does not see anything in the policy address habitat creation. There has got to be a better solution than putting out recommendations that evidently are either ineffective or ignored. Something is missing and that is frustrating.

R. Miget stated his own frustration with the process, and concluded that the AP should be the first alert system to projects that appear to have been overlooked by other agencies. He is concerned about how to generate public awareness of impacts, and how to improve public awareness as a panel.

B. Baker stated the AP is supposed to review the document, not discuss how public awareness can be improved. J. Rester stated this meeting is a chance for the public to come and see what is going on and what type of restoration is occurring. It is a chance for the public to see the latest technology and to review progress on projects. Different agencies have different opinions concerning certain projects. The Council can make recommendations. NMFS may have an opinion with which the Council does not agree. If NMFS and the Council do agree, more weight is given to recommendations, even if other agencies disagree. R. Miget said he just wants to know what the AP is expected to do. He indicated a desire to be as productive as the documents indicate, and if that means narrowing the focus to the enhancement of fisheries in federal waters, then maybe that is what ought to be done, instead of discussing a project up the bayou that six other federal and state agencies are dealing with.

J. Green stated he feels the Council is asking for some advise or concurrence with the draft policy, and it seems to be consistent with what the Council has been attempting to do. The last paragraph on page 1 under H. 1. c. sets forth a charge to the Council that they be consistent with the Magnuson/Stevens Fisheries Conservation and Management Act and assume an aggressive role in the protection and enhancement of habitats important to managed species and their prey. They are not concerned about crabs but they are concerned about shrimp and finfish that have their juvenile experience in state waters. They are concerned about aggressively commenting on those habitat degradations that are going to affect the resource that ultimately will be available for people in the fishery conservation zone to convert to food or convert to dollar bills. What the AP is doing is not inconsistent with that particular paragraph. The Council is not stepping out of their boundaries at all, and they certainly are not going to manage a fishery resource in state waters that ultimately will

be in the Gulf of Mexico. The Council will, however, comment on that habitat and fishery laws that affect the viability of resources that end up in federal waters.

B. Baker stated again that the document is a draft policy statement. It is not detailed, but rather provides a general policy. The policy, according to page 1 is supported by three objectives and they seem to fit together. He asked if there was anything among those three objectives that the AP does not agree with or thinks should be improved. D. Larson suggested eliminating 1. a. & b. and change c. to state **“maintain and improve, create, and develop productive habitats where increased fishery productivity will benefit society.”** He feels the statement encompasses the issue and will reduce wording. B. Baker stated he sees his point, but feels they may want to break down the three points into different levels where “a” may apply in certain circumstances, “b” may apply in certain circumstances, or “c” may in certain circumstances. Also, any combination of a, b, or c could apply.

F. Fisher stated “a, b, and c” are directed specifically by the MSFCMA. R. Miget stated he would add “d” if he was going to make a policy recommendation to pursue legislation that will allow accomplishment of “a, b, and c.” The power of the recommendations depends on the power of what is given by other regulatory agencies. There needs to be something more that will give credence to the Council addressing a state waters issue and making recommendations about estuarine dependent fish. He feels that such guidance is not in the document.

D. Larson asked what if TXDOT decided to sell the I-45 causeway discussed earlier. That means that everything else in the Gulf of Mexico is harmed. Would the Council go inside state waters/state politics and say there is a better answer or another way to handle this? There needs to be enhancement and creation. Green reiterated the Council has never forced a state to take action on a specific issue, but said the MSFCMA states that if a state does not comply with a Council recommendation, then the Council can impose their will upon that state. He said he could be wrong, but feels that loophole was put into the Act in order to allow the Council to make a state do a certain action if it affects a fishery resource that will eventually be going into the Gulf. He then said he could understand objection to item “b,” because the Council can only support the rehabilitation and restoration of the productive capacity of habitats that have already been degraded. The Council cannot restore, for example, the shell reef in east Galveston Bay, but they can support the state if they wish to do so. They can support a public relations situation and probably a financial situation by going to Congress to say this is what is needed. D. Larson asked if Green thinks the Council is useless. Green replied the Council has adopted that role but they do not need to be.

P. Aparicio said the Council recommends to NMFS, and they develop the FMPs. In many ways, the Council is an advisory panel to NMFS. The role of the AP is to make the Council aware of things that should be done and why. That is the most important role for an AP. If habitat is being degraded or there are opportunities to enhance habitat, the AP has a role. The AP can give specifics to the Council to recommend to the appropriate authority, whether it be state or federal agencies.

F. Fisher stated that if you review the total EFH document, it was a tremendous task to do in such a short period of time. The Council had to get concessions to treat it as a management plan and to cover all species. Originally, the intent was to have EFH amendments for every fishery management plan. The only thing lacking in that document is the effect of fishing gear on the habitat. This

deficiency has been recognized, and there is litigation currently pending. Everything else is well covered in a generic sense.

**The Advisory Panel concurred that the EFH amendment is grossly deficient in the effect of fishing gear on habitat.** R. Swafford abstained from comment or voting.

F. Fisher stated all data was collected on the effect of fishing on habitat, but no single study was completed in the Gulf of Mexico. There were studies in other countries, but the Council assumed that those studies were not germane to the Gulf of Mexico.

Rester said that in reference to fishing gear impacts, D. Shively is the chairman of the GSMFC TCC Habitat Subcommittee, and they are compiling an annotated bibliography on fishing gear impacts on habitat throughout the world. There is a very extensive data base with about 180 papers and citations so far and about 175 citations for which there are as yet no papers. He said that they are trying to identify all fishing gears and their associated impacts on habitat. NMFS is looking into the problem, and is not something they are trying to ignore. They are currently trying to fund research programs to address some of these issues that the AP has been discussing. R. Swafford said NMFS had a meeting with SEFSC scientists to start a research program. There are several gear types but the biggest interests are in trawling and longlining. R. Miget said he was concerned about focusing on the shrimping industry. He fears that by not identifying all gears and impacts, one particular industry will be singled out as the primary culprit. He indicated that motor boats with props that scar seagrass needs to be included as well.

D. Larson said he agreed, and said if, for instance, a person is spear fishing, they will go for selective individuals so that can really harm the productivity. Gear and bycatch are not the only adverse impacts. Overfishing and spear fishing need to be included. The total picture needs to be included. One thing cannot be isolated as a problem. P. Aparicio said the injection of oil directly into the water by fishing boats should be included. J. Bergan said if the issue is opened up to such an extent, the AP could spend an entire day dealing with it. He suggested tabling the discussion until a later meeting.

B. Baker said that the AP has been asked to make recommendations on the drafts and insert editorial comments. He said Rester may want to expound on the origin of document. He said does not need to nitpick on every detail. Rester said the AP should be looking at the content of the policies before them. He said that identifying the deficiencies in the EFH amendment is not a part of the charge for the AP in the current agenda item. B. Baker asked if it would be helpful for individual panel members to address specific details in writing.

R. Miget said that page 3, B. Item 1 says "the Council **may**" and Item 2 says "the Council shall." He pointed out that the distinction is very important. Shall is a mandate, and in the passage deals only with anadromous fisheries. At the present time there are no anadromous fisheries managed by the Council. He asked if the last line under 1, which says "may affect the habitat," should be changed to "may **adversely** affect the habitat" or "may affect the habitat **good, bad, otherwise, significantly?**" J. Rester said once again he thinks this wording is coming directly from the Magnuson-Stevens Act, and in the Act it says the Council may comment under certain circumstances. The language for the NMFS typically uses "shall," because there are associated

regulatory issues. Item 2 is also in the Act. The Council does not manage any anadromous fish, but it may be a possibility in the future.

R. Swafford said one thing that is missing from the Council is a clear guidance on what project types or acreages that they want NMFS to comment on to the Council. When Dick Hoogland was coordinating the AP activities, there was an understanding. He informed the AP of any projects that we were potentially going to elevate or any projects that involved wetlands over five acres. The Habitat Program is going to start forwarding letters of recommendation to the Council so they can pick and choose what they want to elevate. The Fish and Wildlife Coordination Act requires the NMFS to review all federal permits. The one thing that is not clear in this process is what gets elevated from the AP to the Council.

B. Baker said that the passage on page 4 D. states the criteria for defining significant projects that the Habitat Protection Committee shall consider and associated guidelines. J. Green stated that on page 3, C 2 the difference between may and shall is quite clear. In reference to the deepening and widening of the Houston ship channel, the Council commented adversely on that project, and he recalled that the AP insisted that they do so. An adverse comment was made from the Council to the COE and to the Port of Houston, the sponsor of the deepening and widening.

The AP agreed that they do not foresee the Council managing an anadromous fishery. **B. Mortiz moved to delete all wording after EFH. D. Larson seconded the motion.** B. Baker asked if that will create any conflict with existing language in the Act. J. Rester stated everything except that last sentence is taken directly from the Act and it is specifying there are two things that the Magnuson-Stevens Act specifies: 1) The Council may comment and 2) The Council shall comment. The last sentence was added. If the anadromous language is maintained, and for some reason in the future an anadromous fishery management plan arises, the Council would not have to go back and change the policy, it will already be in there. Swafford said he thinks the parenthetical statement was there for information purposes and does not apply to the Gulf Council currently. Basically, the Council has the option of commenting on any project. B. Baker asked if anyone objects to deleting the parenthetical statement. **The motion passed unanimously.**

B. Baker stated that, regarding the review of the "Habitat Policy and Responsibilities," there are two points to discuss or put in a motion: 1) there is a gross deficiency in the current documentation outlining the effects of fishing operations on the quality of fishery habitat, and 2) there is also an observation that there are no clear guidelines as to when the AP is to notify the Council about significant projects. There are no clear procedures or threshold levels on what is a significant impact. B. Baker asked if the AP should ask for clarification of what a significant impact is? He stated that the Texas Habitat Advisory Panel makes a recommendation for guidance from the Council to the NMFS and to the Habitat Advisory Panels for triggering notification to the Council of significant projects impacting EFH. R. Swafford said that he works with Rester their EFH coordinator groups to determine a process from day to day, but there is no clear guidance for the AP on what kind of projects affecting EFH should be picked from Texas to recommend to the Gulf Council for potential action. J. Rester said they have been through these same questions with the Habitat Protection Committee. The Council is not set up to deal with 30 day deadlines. If the Council is going to meet there has to be ample opportunity for public input and that takes 25 days notice in the Federal Register. The issue has not yet been resolved.

B. Baker asked if the AP was in agreement that the draft policy describes the role of the Texas Habitat Advisory Panel, and it is unrealistic to meet under the current meeting guidelines. He felt strongly that the AP does not physically have the capability of performing or meeting the expectations to support the Council process as outlined on page 2. B. Baker stated that regarding the draft policy, a motion was passed outlining the deficiencies of the document and the AP recommends that clear guidance by the Council to NMFS and the Habitat Advisory Panels for triggering notification to the Council of significant projects impacting EFH. Another recommendation that is aside from the policy is that the Texas Habitat AP strongly recommends that the AP meet more than once a year in order to make more timely comments and recommendations regarding EFH and generally to perform its duties under the policy.

J. Rester said he agrees with that but in order to have a meeting there must be agenda items. He said that if anyone has any items they want discussed, they must send them to him, and when there are enough items for a meeting, the AP can meet. J. Bergan said the NMFS regional staff notes are very helpful in keeping him updated of what NMFS is reviewing. It represents a compilation of their habitat accomplishments.

B. Baker said a comment was made that draft policy describes a role for the Texas Habitat Advisory Panel that is too comprehensive and cannot physically be supported by the AP. He clarified that it was a statement, not a recommendation. R. Swafford reiterated that he abstained from voting on the "deficiency" motion. J. Rester asked the committee to send any other comments on the documents to him as soon as possible, if they wish to have them incorporated into the minutes.

#### **Wetland Management and Mariculture Policies**

J. Green stated that item 2 in the mariculture section of the policy indicates that the GMFMC encourages environmentally responsible mariculture. He disagreed with that position and asked if the Council has taken that position. J. Rester said that is from the old Council policy statement, and it has not been modified. He said he thinks that what that statement means is that if you are going to have mariculture it should be environmentally responsible. The Council is not trying to encourage mariculture. J. Green suggested removing the word encourage, because there are too many problems with mariculture, and the Council should not be encouraging mariculture.

J. Green stated that the first two sentences under 2 a. referring to exotics should be eliminated. The last sentence expresses what the Council should do. The native species would naturally follow the first sentence of that paragraph. It is redundant with the bottom. Exotics should be used only after thorough investigation has demonstrated there are no detrimental impacts on native species. J. Green asked under 2. f., disease control, who will judge what the procedures are? How much information does NMFS or any other entity that advises the Council have as to what the procedure should be to establish it? R. Miget said Texas does have something set up through Parks and Wildlife, since mariculture activities in Texas are conducted in coastal areas where marine agents go to the farms once a week and check to see whether there is disease in the ponds or the hatchery. J. Rester stated that if the panel has any more comments to please send them to him as soon as possible.

#### **Update on EFH Assessments in Council FMP Amendments**

J. Rester discussed the new EFH Assessment requirement for all Council FMP Amendments. He stated that under the consultation rules of the Interim Final Rule, there is a requirement for all federal

agencies to consult on activities that potentially affect EFH. An EFH assessment must be prepared. The EFH assessment has to be prepared for Council actions also. The assessment must consider the effects of Council actions and particularly the effects of management actions. This means that the Habitat Conservation Division in NMFS and the Sustainable Fisheries Division must now consult on actions that could affect EFH.

#### **Update on the Status of the EFH Lawsuit**

J. Rester stated that American Oceans Campaign, Cape Cod Commercial Hook Fishermen's Association, Inc., Florida Wildlife Federation, ReefKeeper International, Center for Marine Conservation, Institute for Fisheries Resources, National Audubon Society, Natural Resources Defense Council, and Pacific Coast Federation of Fishermen's Associations are suing the U.S. Department of Commerce, National Oceanic and Atmospheric Administration, National Marine Fisheries Service, New England, Gulf of Mexico, Caribbean, North Pacific and Pacific Fishery Management Councils on their EFH amendments. The allegations made about the Gulf of Mexico are that the EFH amendment fails to assess fishing gear adequately and fails to minimize the adverse effects of fishing on EFH to the extent practicable, in violation of the explicit requirements of the MSFCMA and implementing regulations. Defendants' preparation and approval of these amendments, therefore, violates the MSFCMA and is arbitrary, capricious, and contrary to law in violation of the Administrative Procedure Act. In addition the defendants unlawfully prepared and approved these amendments by relying upon inadequate environmental analysis in violation of the National Environmental Policy Act.

#### **Other Business**

B. Moritz asked if someone can give a presentation at the next meeting on the effects of a dam built in Brazoria County. The dam has caused a lack of freshwater inflow and has killed native vegetation. He also asked to have someone give a presentation on the Dead Zone off Louisiana and the monitoring plan for Wild Cow Bayou.

With no other business, the meeting adjourned at 4:05 p.m.



OK

**DRAFT**

**MINUTES**

**GULF OF MEXICO FISHERY MANAGEMENT COUNCIL**

**MISSISSIPPI/LOUISIANA HABITAT PROTECTION ADVISORY PANEL**

**NEW ORLEANS, LOUISIANA**

**THURSDAY, SEPTEMBER 23, 1999**

**ATTENDANCE:**

**Members:**

Glenn Thomas	Louisiana Department of Wildlife and Fisheries
Andy Mager	National Marine Fisheries Service
Cynthia Sarthou	Gulf Restoration Network
David Richard	Stream Property Management, Inc.
David Frugé	U.S. Fish and Wildlife Service
Randy Lanctot	Louisiana Wildlife Federation

**Others:**

Chris Dorsett	Gulf Restoration Network
Jeff Harris	Louisiana Department of Natural Resources
Gary Roysse	National Marine Fisheries Service
Kathleen Hebert	National Marine Fisheries Service
René J. Labadens, Jr.	National Marine Fisheries Service
Linda Guidry	National Marine Fisheries Service
Bichnga "Jay" Boulet	National Marine Fisheries Service
Beth Bourgeois	National Marine Fisheries Service
Arthur McEnany	Louisiana Senate Natural Resources Committee
Paul Coreil	LSU Cooperative Extension Service
Karen Foote	Louisiana Department of Wildlife and Fisheries

**Staff:**

Jeffrey K. Rester	Gulf States Marine Fisheries Commission
Cheryl R. Noble	Gulf States Marine Fisheries Commission

**Call to Order**

Chairperson Cynthia Sarthou called the meeting to order at 9:04 a.m.



### **Adoption of Agenda**

The agenda was amended to have J. Rester present Item No. 4., "Review of the Turkey Creek Development Project in South Mississippi." With this change, R. Lanctot moved to adopt the agenda. D. Frugé seconded it, and it passed unanimously.

### **Approval of Minutes**

D. Frugé moved to approve the November 17, 1998 minutes as submitted. R. Lanctot seconded it, and it passed unanimously.

### **Review of the Turkey Creek Development Project in South Mississippi**

J. Rester said that a property owner named Mr. Ward wants to develop his property in Gulfport, Mississippi on land that is not tidally influenced wetlands, but it is at the headwaters of Turkey Creek. He showed a map of the project location and said it would effect about 1,300 acres. The property is primarily jurisdictional wetlands that form the headwaters of Turkey Creek, which drains into Bernard Bayou and into the back bay of Biloxi. These wetlands form very important water purification and water storage functions which benefit downstream water bodies. Mr. Ward started developing this property a couple of years ago without a permit, so EPA levied a violation against him. He built ditches in the northern portion of the site and then an extensive network of road side ditches on the southern portion of the site. Two large drainage ditches in the southern portion were built that connected the road side ditches with Turkey Creek. The illegal work in the wetlands occurred after Mr. Ward engaged in preliminary discussions with the Corps of Engineers (COE) about the development plans and urban requirements. EPA levied a Clean Water Act violation against Mr. Ward, which were resolved through a penalty of \$115,000 and a consent order requiring restoration of the site. In this consent agreement, Mr. Ward agreed to restore the hydrology of the site by developing a ditch restoration plan. Mr. Ward has not been issued a permit yet, but C. Sarthou wanted to make the AP aware of what he is proposing. J. Rester then read the site description, violations, consent agreement and new proposal to the AP.

J. Rester said EPA is the primary federal agency involved, not NMFS, because the plan does not affect tidally influenced wetlands. NMFS does, however, have some concerns about the water quality in the back bay of Biloxi as a result of the project. He said Mr. Ward has stated that he wants to develop this area as light industrial and probably make about half of it semi- or non-permeable surfaces. There has not been a public notice yet because a permit application has not been filed. NMFS has not objected this project yet; they are still waiting to find out exactly what is being proposed. Their main concern will be water quality issues.

C. Sarthou asked if the Council wants the AP to monitor this, or do they want the AP to take a position and present it to the Council so they can act quickly if needed. J. Rester said he thinks this is something that the Council needs to be made aware of, but the AP should not take action until the public notice. C. Sarthou said that the local community is concerned that the political pressure will push the project forward without addressing any of the concerns, and that is another reason the Council should be made aware.

R. Lanctot said he thinks the authority and concerns are outside of the Council's purview and asked how far up the Mississippi Valley should the AP should address issues. A. Mager said issues can be tracked by the AP up into fresh/non-tidal waters is so desired, and if it affects water quality that

will affect the Gulf of Mexico it would be a concern of the Council. In the generic amendment for EFH there are discussions that deal with indirect effects on EFH, and water quality is one of the provisions; consequently, the Council has the prerogative to get involved. The AP agreed that, at this point, they will not bring this to the attention of the Council until a public notice has been issued. A. Mager suggested referring it to FWS, and if they feel this is a potential issue, write a letter strongly supporting FWS. C. Sarthou suggested the AP propose to NMFS to monitor the project, and if they feel there is a significant connection between the project and fisheries impacts bring it to the attention of the Council for comment. R. Lanctot asked if there were other alternatives for Mr. Ward to do the project, such as on another property. C. Sarthou said that this is an example of the huge problem of development on the Mississippi coast. She said notice is out for the COE to do a programmatic environmental impact assessment on the coast of Mississippi because of casino development, and NMFS should be involved in this because of fisheries habitat issues.

**C. Sarthou said there is consensus of the panel that direction is needed from NMFS on the project, particularly regarding fisheries impacts. She stated that this issue is an example of something the AP look out for in Mississippi in the future. If in fact these projects have fishery impacts, NMFS should bring them to the panel's attention.**

### **Review and Revision of the Council's Habitat Policy and Procedures**

#### **Council/NMFS Concurrence Paragraph**

A. Mager stated that there was a previous arrangement with the Council that NMFS would include their interest in NMFS's initial letters concerning project impacts. The standard was that NMFS would only put that language in letters concerning projects that they would potentially elevate. The idea of the Concurrence Paragraph is that it gets the Council on the administrative record within the comment period, and then the Council has the option to pursue or not pursue the issue. If the project became elevated the Council would be on record with its concerns.

D. Richard asked if this concurrence gives a blanket permit to NMFS to express their views, and those views will always parallel the Council's. He expressed concern at having someone else express their views for the Council. A. Mager stated that if there is a project that they put this paragraph in, it does not obligate the Council to maintain that position. The letter puts the Council's concerns in the record for that comment period, an important opportunity, since some of the comment periods are as little as 15 days, and there is no way the Council can meet a deadline that short. D. Richard stated that he understands the concept but he is concerned with the wording "preliminary concurrence." He does not think that the Council should state a position on a project until they have had time to review it. He asked if there was a way to state that the Council has concerns but has no position yet. A. Mager said that if you do not state a position on the project then it is meaningless to the COE. C. Sarthou asked how this paragraph changed from the previous paragraph. A. Mager said it is basically the identical paragraph except the citation from the Magnuson Act has changed.

C. Sarthou stated that all it actually does is include the Council into the process. It means they are a player in the process. If they have not commented at all during the comment period, legally they have no standing to be involved in any of the discussions. With the short comment periods and the time between Council meetings, many of the comment periods are over before the Council can get

involved. C. Sarthou asked if the AP would agree to ask the Council and NMFS attorneys to modify the wording because they have a problem with the phrase "preliminary concurrence."

D. Richard asked if you have to take a position to the COE, or if you can just express interest. A. Mager stated that it has to be a position. D. Richard asked what would happen if an objection letter is received with "preliminary concurrence" language in there. If NMFS has the resources to answer the questions or to modify the project by whatever means, what happens in the permitting process? If the Council has that particular letter of objection and has not concurred, it could delay the process, which is something everyone wants to avoid because of the problems it will entail. A. Mager stated that the COE will come back to NMFS and the Council and say the applicant has decided to a certain action, and, if the COE does not receive a response from the Council, then they assume the Council has no objections. C. Sarthou asked if someone would move to forward this to the Council with the request that the Council's attorneys look examine the issue to see if the Council gives up anything by including this language.

**A. Mager moved to submit the concurrence paragraph to the Gulf of Mexico Fishery Management Council for consideration and note the concerns of the Advisory Panel to obtain legal review of the language. G. Thomas seconded and it passed unanimously.**

#### **Habitat Policy and Responsibilities**

C. Sarthou said she is concerned that the document only discusses necessary means to support a sustainable fishery under federal management. She feels that prey species should also be given consideration. A. Mager stated that the language is verbatim from the Magnuson-Stevens Act. Sarthou said it does not discuss prey species contribution to a healthy ecosystem, and prey species can be critical. R. Lanctot said there is more elaboration on these points below that paragraph. On letter "a." it says "including their food base" and the last paragraph has "managed species or their prey." Also, the sentence C. Sarthou referred to mentions "feeding," so it covers prey species. Sarthou asked if Mager believed the language would allow the Council to comment if something threatened the habitat of important prey species or prey organisms. A. Mager responded yes it would.

R. Lanctot said that in the second line of the second paragraph it says "to increase their extent," and that to some extent it is addressed in the subsequent language. However, he said it seems to him that you want to "as practicable and prudent increase the extent." C. Sarthou asked if his concern is that you can turn freshwater marsh to saltwater marsh. D. Frugé said that in reference to that phrase, you do not want to do anything that is not ecologically sound just because it might benefit some of the managed species.

**D. Frugé moved to ask the Council to delete the phrase to "increase their extent." G. Thomas seconded it and it passed unanimously.**

R. Lanctot asked for an explanation on the phrase (8<sup>th</sup> line, 2<sup>nd</sup> paragraph) "and may include aquatic areas historically used by fish where appropriate." A. Mager said there are a lot of areas that have been cut off over time. One of the biggest problems has been with mosquito control. There are efforts underway to restore those areas. R. Lanctot said that is interesting, and perhaps it should be elaborated more in the document. A. Mager said he does not think that should be part of the policy

section but maybe included in some type of support document. He suggested doing a companion document to the policy to include definitions and examples. C. Sarthou asked the AP whether they should ask the Council to consider a companion document to these policies. She suggested flagging those terms that can cause confusion and clarify the terms in the companion document.

R. Lanctot inquired (11<sup>th</sup> line, 2<sup>nd</sup> paragraph) to reference on “sustainable fishery” and asked sustainable at what level? A few fish forever or a lot of fish forever? A. Mager said those terms, such as sustainability, are defined by the Council for each fishery. This is another example of why there should be a companion document with definitions. C. Sarthou suggested changing the wording to “sustainable fishery as defined by the Council.” The AP agreed that if they are going to have a companion document with definitions, “sustainable” can be flagged and the reader can refer to the other document.

**R. Lanctot asked why “important commercial and recreations fisheries” is in 1. a. and asked what is defined as important? The AP agreed to change it to managed species.**

D. Richard said, also referring to 1.a., he has a question regarding the word “current” in the phrase “maintain the current quantity and productive capacity of habitats.” He said coastal Louisiana has had drastic changes and “current quantity” and “quality” of some of those areas have been degraded. Because of this, he has a real objection to the word “current.” K. Foote said item b. addresses that. C. Sarthou suggested deleting “current,” which should resolve the issue. C. Sarthou asked if deleting “current” would satisfy the group, and D. Richard said he would like to see “diversity” added. R. Lanctot moved to change the wording in item 1. a. to read: “maintain the diversity and the productive capacity of habitats.” D. Richard still was not satisfied with this wording. A. Mager suggested changing it to “maintain habitat quantity, diversity, and capacity to sustain the production of managed commercial and recreational fisheries, including their food base.”

**C. Sarthou suggested a compromise to this: maintain the diversity and productive capacity of habitats in a quantity necessary to sustain managed fisheries, including their food base. Because that does not say to maintain the quantity that now exists just a quantity that is necessary to sustain the fishery. D. Richard said he has no problem with that, but suspects A. Mager might because there is no sustainability of a certain amount at a point and time.**

A. Mager said the overriding issue is that the policy covers all of the Gulf states, and D. Richard is dealing specifically with Louisiana. The scale of problems in Louisiana is so unique from those of the other states. D. Richard said he does not know how to deal with it from a number of habitat panels but the responsibility of this panel is to manage Louisiana’s resources. R. Lanctot stated he thinks it is a good idea to have an attachment with some explanation of terminology used in the policy.

**D. Richard suggested taking out the whole parenthetical phrase on page 1 of the Habitat Policy document. The advisory panel agreed.**

R. Lanctot said that Item 1. discusses the prey and food organisms, and he thinks more thought should be given to that by a special fisheries person that really knows how to explain which fish and crabs are needed for the food base.

**R. Lanctot suggested that under item 1., last paragraph, 1<sup>st</sup> sentence, to change last words to read “managed species and their food base.” The advisory panel agreed.**

R. Lanctot referred to the last line of item 1., last paragraph, and stated that it always bothers him that, when discussing fisheries and fish resources, incorrect terminology is used. He said that “fishery” is everything involved with fisheries, i.e., the person that catches the fish, the fish, the consumer, etc. But in many places in the document and others it says “fishery resources” and that is a legitimate term in some context, but when talking about a fish population or a fish resource you are talking about that resource, the fish resource. Fishery resource, in that context, is not proper usage.

**C. Sarthou asked J. Rester to note that throughout the document he may want to revisit fish versus fishery and see which one is appropriate or define it. The panel agreed.**

**D. Richard suggested that on item 2. A. 2. e., add restoration after conservation. The Advisory Panel agreed.**

**D. Frugé suggested, on item 2. A. 2., second line, last paragraph, adding after impact “or substantially benefit.” He said there may be projects the AP may want the Council to support. The Advisory Panel agreed.**

R. Lanctot questioned the reference to anadromous fishery in item 2. B. 2. A. Mager said that the Gulf Council does not manage any anadromous fish, but a couple of the Councils, including the South Atlantic Council, have interpreted that language in Magnuson to mean if an anadromous fish, even though they do not manage it, occurs within their area of responsibility, then they still have authority over it. That issue has not yet been fully resolved. He said he thinks that language was put in there primarily to address west coast salmon.

**The advisory panel indicated that #1 is sufficient and #2 should be removed, because it is redundant.**

R. Lanctot asked someone to explain or give an example of #2, where a project might be precedent setting. A. Mager said there may be a development where a house on stilts is built in an area, and that is the first house on stilts in the area. If that goes forward, it sets a precedent for everything else that is done along that waterfront.

**The Advisory Panel agreed to delete #4 on page 5.**

C. Sarthou stated “significant” should be explained in #1 (page 5), but if a companion document accompanies this, that should be enough. A. Mager explained HAPC, and said, so far, there are nine areas that are considered HAPCs.

### **Habitat Procedures Document**

R. Lanctot asked, in reference to the 3<sup>rd</sup> paragraph, how the Council will know to take action prior to project permits and notices? He asked how would the AP know about a project. J. Rester said they would know by public notice, or if anyone from an AP makes the panel aware. For example,

C. Sarthou brought the Turkey Creek project to Rester's attention and asked that it be put on the agenda for discussion. Public notice has not been given for the project, but discussing it at the meeting makes NMFS aware that there may be a problem that they can start investigating. If they determine there could be an adverse impact they could immediately forward it to the Council for consideration before it is permitted.

R. Lanctot referred to #2 and asked if it meant general concurrence relative to general permits. A. Mager said that there is a section that covers the consultation process, which identifies three main forms of consultation: individual, programmatic, and general concurrence. General Concurrence covers a category of activities that are identified as not having substantial EFH considerations. There is also a requirement for public review.

C. Sarthou said there is no procedure in the document for Council involvement in any kind of programmatic review. She asked if the AP can incorporate that into the document, because it may be helpful or important to know the guidelines followed for programmatic review and how the Council gets involved. She would like to see the Council incorporate the interim rules or procedures on how the Council is to get involved in programmatic reviews. The Council could establish its own procedure on how it should get involved in reviews. A. Mager said the language in the document is in the Interim Final Rule.

**R. Lanctot suggested putting programmatic reviews on the agenda for the next meeting. C. Sarthou said she would like to suggest they consider it, and discuss whether they should be involved in programmatic reviews, because they could have a significant impact on a lot of things.**

**The AP stated that it would like to see the Council formulate a procedure to deal with programmatic reviews.**

**R. Lanctot moved to ask the Council to consider sending a letter to NMFS asking to participate in programmatic reviews and to be able to give their opinion as to the impacts or lack thereof. A. Mager seconded it, and it passed unanimously.**

R. Lanctot asked which "federal agency's" are referred to in the second to the last line under # 2, and A. Mager said all federal agencies.

C. Sarthou said it is confusing, and asked if a general concurrence is given, does the COE have to track the effect of the general concurrence on EFH? A. Mager said yes, that it is part of the process.

### **Wetland Management and Mariculture Policies**

J. Rester said there has been changes to the mariculture policy but not the wetland management policy. D. Richard said he has a major problem with the wetland management policy. C. Sarthou asked if he has suggested changes to the policy or if he would like to craft some to bring before the committee. He said a phrase needs to be included to indicate that the integrity and productivity of the natural ecosystem should not be impaired, with due consideration of past ecological alterations. What might be considered natural by some today is really an artifact of some past human impact on that system.

A. Mager said this document was done a long time ago and said a lot of the content does not comply with the current Magnuson-Stevens Act. He then indicated that item "b" is a great goal but is not a Council responsibility. A. Mager suggested recommending these documents be revisited. C. Sarthou suggested they be reviewed by staff and NMFS and be brought back to the advisory panels. As an alternative, all resource agencies could get together and develop a new policy. C. Sarthou asked if the AP was in agreement that the wetlands management policy is totally inadequate and inappropriate at this time, and if everyone feels the policy should be revisited by staff and NMFS and any other resource agency necessary. She said a new policy should be crafted for the AP's consideration that is more applicable to fisheries management today. The primary concern of the AP is that what has happened to the coastal basins along the Louisiana coast is not consistent with the new Magnuson-Stevens Act requirements. D. Richard said the new policy should take into account the present wetland management strategies and should address the fisheries component of wetland management systems.

**A. Mager moved that the Habitat Advisory Panel would like the GMFMC Habitat Committee to revisit the wetland management policy, because the AP feels it is no longer applicable, considering the revisions to the Magnuson-Stevens Act. D. Richard seconded, and it passed unanimously.**

A. Mager said that if the Council accepts the recommendation, the task would probably be conducted by Rester. A subgroup consisting of representatives from all of the agencies could be formed to work on this. It needs to support present restoration strategies that are ongoing in Louisiana and elsewhere. Wetlands is currently one of the most pivotal issues, and the policy is inadequate. K. Foote and A. Mager will convey to the Council how important the AP feels this issue is.

**A. Mager moved to have the Council develop a Seagrass Policy. D. Richard seconded it, and it passed unanimously.**

#### **Mariculture Policy**

**R. Lanctot stated that under 2. a. on the second to the last line after "demonstrated" add "that" and put "no" in caps and bold for emphasis.**

R. Lanctot referred to 2. d. and asked where would the effluent be discharged. It says do not discharge in emergent marsh, but intuitively it sounds like that might be a good place to manage discharge.

**G. Thomas suggested rewriting the sentence to read "mariculture effluent discharge locations should be sited to avoid negative impacts to EFH," and then list some of those activities. The advisory panel agreed.**

**G. Thomas stated that under 2. b. 3. change "or" to "and" to read "natural and public waters." The Advisory Panel agreed.**

**R. Lanctot referred to 2. f. and asked what is being done on preventing the spread of disease to wild organisms. C. Sarthou said this would be a good agenda item for the next meeting.**

### **Update on EFH Assessments in Council FMP Amendments**

A. Mager discussed the new EFH Assessment requirement for all Council FMP Amendments. He stated that under the consultation rules of the Interim Final Rule, there is a requirement for all federal agencies to consult on activities that potentially affect EFH. An EFH assessment must be prepared. The EFH assessment has to be prepared for Council actions also. The assessment must look at the effects of Council actions and particularly the effects of management actions. This means that the Habitat Conservation Division in NMFS and the Sustainable Fisheries Division must now consult on actions that could affect EFH.

### **Update on the Status of the EFH Lawsuit**

J. Rester said a lawsuit was filed in April 1999 by the Florida Wildlife Federation, suing the Gulf of Mexico Fishery Management Council, Department of Commerce, NOAA, NMFS over the EFH Amendment. The complaint has been modified twice since that time to include the following Plaintiffs and Defendants: Plaintiffs: American Oceans Campaign, Cape Cod Commercial Hook Fishermen's Association, Inc., Florida Wildlife Federation, ReefKeeper International, Center for Marine Conservation, Institute for Fisheries Resources, National Audubon Society, Natural Resources Defense Council, and Pacific Coast Federation of Fishermen's Associations. Defendants: U.S. Department of Commerce, National Oceanic and Atmospheric Administration, National Marine Fisheries Service, New England, Gulf of Mexico, Caribbean, North Pacific and Pacific Fishery Management Councils

R. Lanctot asked why all of the Councils were not made defendants and Rester said some of the Councils have not submitted a section on gear impacts in their FMPs yet, but it is envisioned that when they do, they will also be made defendants. C. Sarthou said it is her understanding that the lawsuit is not specifically focused on trawls or the commercial industry, but rather on all gear impacts. The environmental community feels that the Councils did not comply with the Magnuson-Stevens Act requirements to do scientific studies on what the impacts, if any, fisheries have on EFH i.e., anchors, trawls, fishing line, propellor damage, etc., commercial and recreational. Rester said he agreed that they do say fishing gears, but the main gear they keep bringing up is shrimp trawls, the only gear mentioned specifically.

### **Allegations**

The EFH amendment fails to assess fishing gear adequately, and fails to minimize the adverse effects of fishing on EFH to the extent practicable, in violation of the explicit requirements of the MSFCMA and implementing regulations. Defendants preparation and approval of these amendments, therefore, violates the MSFCMA and is arbitrary, capricious, and contrary to law, in violation of the Administrative Procedure Act. In addition the defendants unlawfully prepared and approved these amendments in reliance upon inadequate environmental analysis, in violation of the National Environmental Policy Act. These violations of law by the defendants allow ongoing fishing activities to produce adverse effects upon EFH, to the direct injury of the plaintiffs and their interests in the proper management and conservation of marine and estuarine resources and the maintenance of sustainable fishing practices and communities. At present in the Gulf of Mexico, shrimp trawling and other fishing activities adversely affect EFH by disturbing the ocean floor and the flora and fauna located there. Among other things, shrimp trawling adversely affects seagrass meadows and other areas of the sea floor located in the Gulf of Mexico that serve as EFH. Various fishery management measures can be used to protect EFH in the Gulf of Mexico from the effects of fishing activities such



as shrimp trawling. However, defendants have failed to investigate adequately certain measures to determine whether they are practicable. In addition, defendants have failed to include in the Gulf EFH Amendment any new measures to protect EFH in the Gulf of Mexico. These failures violate nondiscretionary duties imposed upon defendants by the plain language of the MSFCMA and implementing regulations.

A. Mager said if funding is received, NMFS is planning a workshop to develop a research plan in terms of prioritizing the damaging gears and to develop some type of logical structure to conduct research. He said there is no disagreement that research needs to be done, and he will keep the AP informed on the planning of the workshop. R. Lanctot said this is an example of bad faith on the part of the environmental community, because there has not been time to do the research that is suggested by the EFH amendment, and a lawsuit is premature. C. Sarthou said that it is her opinion that the environmental community is upset with NMFS, but their significant concern is, at least with the Gulf Council, that the politics will prohibit, and in fact has prohibited, even consideration of these provisions. She said she has been to the meetings, and there were a lot of people there who were not even willing to bring the issue up. They were only going to bring the issue up if it was forced by NMFS. A lot of people felt that within the political context of the Council, it would never be addressed. She said that may be wrong, but she can see both sides of this issue.

A. Mager said the realities are we have no information whatsoever to come up with any kind of management effort that makes sense and is legally defensible. So if something is done just to appease a group without enough data to defend in court there is no telling what will ensue. Secondly, as the information bases develop, the conservation recommendations can be revisited for the shrimp plan amendments and others, and the council will have to consider the recommendations. Information is key. There is no intent on the part of the NMFS to specifically avoid addressing the problem. C. Sarthou indicated that the fish trap issue has contributed to the environmental community's frustration by not speeding up the phase out. The law suit may be a way for some groups to readdress the fish trap issue.

R. Lanctot said that with this lawsuit, it gives the public the impression that trawls are tearing up the ocean floor and killing dolphins, turtles, and everything else. This is denied by the environmental groups, but it makes it look like they are doing the best thing for the world in the oceans, and it is mostly not true. The public, however, does not see it that way. C. Sarthou disagreed, saying that in the Pacific it may be true. In fact, Pacific factory trawlers are causing significant problems. R. Lanctot said he doesn't disagree, but the issue should be addressed where it is occurring, not generically. The shrimpers and others in the fishing business in the Gulf are being besieged, and we cannot expect them to invite us on their boats and take the chance of using observer information against them.

#### **Update on the Broadwater Casino Expansion Project**

J. Rester said not much has changed since his last report. President Casino wants to fill 50.4 acres of water bottom in Mississippi sound to create six casinos and six resort hotels. They want to dredge 52 acres in the Mississippi sound. As far as the current status, EDAW, from Atlanta, GA is working on an environmental impact statement, and a draft should be available in the next couple of months. The mitigation has changed somewhat. There will still be on-site mitigation consisting of 17 acres of tidal marsh, shallow water bottom, and submerged aquatic vegetation, and they are planning to

purchase Deer Island, a few miles to the east, to deed to the state of Mississippi. Sarthou said it is basically blackmail, saying that if they get approval on their project they will deed the island to the state. If not they will build a casino on it. Sarthou said the panel may be interested in knowing that there is a proposition to put Cat Island into the Gulf Islands National Seashore. The casinos have expressed an interest in acquiring it. It is the last privately owned barrier island offshore Mississippi, and the owners seem interested in taking a loss in order to sell it to the federal government. The Gulf Island Conservancy will be testifying next week before Congress in support of the National Seashore Program acquisition of the island. Sarthou said that she will keep the AP advised. Rester said there has been talk of creating an island strictly for gambling. Lanctot asked that Rester keep the panel informed on the law suit.

With no further business, the meeting adjourned at 12:50 p.m.



**SOUTHEAST RECREATIONAL FISHERIES INFORMATION NETWORK [RecFIN(SE)]  
MINUTES  
Tuesday, September 21, 1999  
Tampa, Florida**

Vice-Chairman Craig Lilyestrom called the meeting to order at 1:00 p.m. The following members, staff, and others were present:

**Members**

- Kevin Anson, AMRD, Gulf Shores, AL
- Page Campbell, (proxy for L. Green), TPWD, Rockport, TX
- Bob Dixon, NMFS, Beaufort, NC
- Kerwin Cuevas, MDMR, Biloxi, MS
- Doug Frugé, USFWS, Ocean Springs, MS
- Stephen Holiman, NMFS, St. Petersburg, FL
- Rick Leard, GMFMC, Tampa, FL
- Craig Lilyestrom, PRDNER, San Juan, PR
- Ron Lukens, GSMFC, Ocean Springs, MS
- Joe O'Hop, FFWCC, St. Petersburg, FL

**Others**

- Richard Cody, FFWCC, St. Petersburg, FL
- Jennifer Lee, NMFS, St. Petersburg, FL
- Eric Prince, NMFS, Miami, FL
- Tony Lowery, NMFS, Pascagoula, MS

**Staff**

- Dave Donaldson, GSMFC, Ocean Springs, MS
- Madeleine Travis, GSMFC, Ocean Springs, MS

**Approval of Agenda**

The agenda was adopted as presented.

**Approval of Minutes**

The minutes of the meeting held on April 6, 1999 in La Parguera, Puerto Rico were approved as amended.

**Presentation of NMFS Activities Regarding Tournament Sampling**

T. Lowery of the National Marine Fisheries Service (NMFS) National Seafood Inspection

Laboratory (NSIL) in Pascagoula, Mississippi gave a presentation on the development of the NMFS Highly Migratory Species (HMS) Tournament Registration and Reporting Program which should be operational in 2000. Lowery reported that various offices within NMFS handle different components of this program which include, billfish tournament monitoring, registration, a website which handles registration and self reporting for shark tournaments , and the development of a list of tournaments. Since the program is new, NMFS management will be making a decision on the appropriate office to administer the program.

T. Lowery reported that new requirements for HMS tournaments went into effect on May 28, 1999. One requirement is that Atlantic and Gulf HMS tournament operators, including Puerto Rico and the U.S. Virgin Islands, must register with NMFS at least four weeks prior to the start of the tournament. If requested by NMFS, these tournaments are required to report HMS catches.

Lowery noted that the first task in initiating this program is to identify tournaments. The NSIL is using internet searches, as well as newspaper and magazine advertising to identify tournaments and has developed a tournament data base with about 350 tournaments listed for 1999. There are a significant number of tournaments not yet identified, therefore, NSIL is collaborating with staff from the Gulf States Marine Fisheries Commission (GSMFC) in an effort to identify tournaments. The second task is to get tournament operators to register their tournaments. Once a tournament is identified, NMFS staff will send out letters explaining the registration and reporting requirement. The third requirement of the program is deciding what landings information to collect. Possibilities include, total landings, catch per unit of effort, and bycatch.

Lowery then gave examples of possible data collection situations which included billfish tournaments interviewing boat captains, rodeo tournaments interviewing participants, or self reporting by either boat captains or participants. Lowery noted that the main advantages for separating the HMS Tournament Registration and Reporting Program from the need to collect CPUE and bycatch data are that NMFS would be able to obtain the HMS tournament landings information economically, and the CPUE and bycatch information would be focused to meet the needs of stock assessment groups. In closing, Lowery stated that he believed that given the budget constraints for FY2000, this is the method most likely to be selected by NMFS management.

E. Prince responded that the NMFS Southeast Fisheries Science Center in Miami has been

responsible for billfish tournaments for 28 years in the Gulf, then expanding to include Puerto Rico and the U.S. Virgin Islands. Prince stated that as a result of the 1988 billfish management plan, they instituted data collection from tournaments, and the registration program was implemented last year. Prince noted that his office, in conjunction with B. Sutter's office, is required to develop a list of registered billfish tournaments every two weeks. Prince then went on to discuss the difficulties of identifying billfish tournaments using the Internet.

R. Lukens noted that this Committee has a general interest in dealing with the tournament issue, and would like to get all the expertise available. Lukens noted that he contacted Spencer Garret of NSIL and discussed data collection and data management activities being done in partnership with the FIN program, and the difficulties that arise when individual agencies go forward with programs that are uncoordinated. Lukens stated that the RecFIN(SE) Committee believed that it was important to begin discussing fishing tournaments in general, with the goal of making tournament sampling programs more effective for fisheries management. T. Lowery noted that a workshop on HMS tournaments is being developed by S. Garret of the Pascagoula Laboratory and will be held this year.

Following Committee discussion, D. Donaldson noted that the RecFIN Biological/Environmental Work Group has been charged with addressing the issue of sampling fishing tournaments and they have developed a list of tournaments in each state. The Committee also discussed the complexities of reporting and registration requirements for tournaments. Since the Biological/Environmental Work Group will be investigating tournaments, R. Lukens suggested that staff from the Southeast Fisheries Science Center who have been involved with billfish tournaments, and NSIL staff be invited to participate in the process.

### **Work Group Reports**

Biological/Environmental Work Group - D. Donaldson reported that at the last RecFIN(SE) Committee meeting, the Biological/Environmental Work Group had been asked to prioritize several ongoing tasks (Attachment A). A matrix outlining the various tasks was developed by Donaldson and M. Osborn and was used by the Work Group in determining which tasks should take precedence. After meeting via conference call, the Work Group recommended that the Committee focus on night

fishing sampling and tournament sampling. Mail ballots were sent to the FIN Committee and these two items were approved. The issue of tournament sampling has been discussed at this meeting and will continue. The Work Group suggested that night fishing activities be initiated in 2000, to include compiling a site register. Donaldson noted that the State-Federal Fisheries Management Committee (S-FFMC) met and discussed night fishing as an activity for 2000.

R. Lukens explained that the S-FFMC took recommendations from the FIN Committee to select items to be funded under the FIN for 2000. Lukens noted some of the uncertainties associated with sampling night fishing which include, location, cost, remote sites, etc. Because of these and other issues, the S-FFMC recommended that no money be spent at this time on the development of a night fishing site register, but that the Committee should further investigate and consider these issues in order to determine if this is still a high priority issue. After discussing this issue, **the RecFIN(SE) Committee made a recommendation to charge the Biological/Environmental Work Group with further exploration of night fishing, including anticipated problems and benefits, while considering the issues raised by the S-FFMC.** Lukens also noted that the S-FFMC suggested that any funding which might have been used for night fishing, could be used to increase recreational interviews. P. Campbell will provide the Biological/Environmental Work Group with a copy of the report done by Texas Parks and Wildlife Department on day versus night fishing.

#### **Update on Charter Boat Pilot Survey in the Gulf of Mexico**

D. Donaldson reported that the Charter Boat Pilot Survey is funded through December 1999 and has been identified as a task for 2000. Texas is also considering implementing this methodology and is currently compiling a list of charter boat vessels. Donaldson stated that the Charter Boat Pilot Survey has not yet been evaluated, but is scheduled for the week of October 11 in order to be able to present the results to the November meeting of the Gulf of Mexico Fishery Management Council (GMFMC). Donaldson then noted the concern expressed by the charter boat industry since NMFS has not yet reviewed the methodology used in the survey, and the importance of having the cooperation of the charter boat captains.

R. Lukens stated that the pilot period ended on December 31, 1998 and that nine months should have been ample time to evaluate the data. Lukens noted that the longer the pilot survey is

run, the longer the duplication of effort and expense, and he suggested that when a decision is made it should be retroactive to January 1999. In discussing the situation, the Committee reviewed the evolution of the evaluation plan. A list of evaluation criteria was developed by the Charter Boat Team and will be used by the evaluators in assessing the methodology of the Charter Boat Pilot Survey. D. Donaldson noted that he, D. VanVoorhees, J. O'Hop, M. Kasprzak and possibly E. Cortes will attend the evaluation. R. Lukens suggested that a written charge be given to the evaluation team asking for recommendations.

After lengthy Committee discussion on the evaluation process, **R. Lukens made the following motion: the reviewers of the Charter Boat Pilot Survey will be provided historical background of the study, a formal presentation of each methodology involved in the study including the estimates that resulted from those studies, an expectation of a recommendation regarding the performance of each methodology based on the criteria provided and a single recommendation on a preferred methodology, and that the reviewers collaborate and provide a single report to the RecFIN(SE) Committee within two weeks of the evaluation. The motion was seconded and passed with NMFS opposed.**

#### **Election of Officers**

C. Lilyestrom of Puerto Rico was elected Chairman and K. Anson of Alabama Vice Chairman.

**There being no further business, the meeting adjourned at 5:00 p.m.**



RecFIN(SE) Biological/Environmental Work Group  
Meeting Summary  
April 5, 1999

The meeting convened at 9:05 a.m. The following members and others were present:

Members

Jeff Brust, ASMFC, Washington, DC  
Bob Dixon, NMFS, Beaufort, NC  
Maury Osborn, NMFS, Silver Spring, MD  
Tom Schmidt, NPS, Homestead, FL  
Kerwin Cuevas, MDMR, Biloxi, MS  
Kevin Anson, AMRD, Gulf Shores, AL  
Craig Lilyestrom, PRDNER, San Juan, PR  
Toby Tobias, USVI/DPNR, Frederiksted, VI  
Ivan Mateo, USVI/DPNR, Frederiksted, VI  
Luz Maria Yoshira, DRNA, Rio Pietra, PR

Staff

David Donaldson, GSMFC, Ocean Springs, MS

Purpose of the Meeting

D. Donaldson stated that the purposes of the meeting were, in conjunction with the Caribbean, to begin discussing the development of marine recreational fishery surveys methodologies for the Caribbean; review of compilation of metadata related to changes in fishing regulations; review materials concerning night fishing activities and develop recommendations; and develop sampling methodologies for fishing tournaments.

Development of marine recreational fishery surveys methodologies for the Caribbean

D. Donaldson reviewed some of the issues discussed at the last meeting. The group discussed some of the possibilities for conducting marine recreational surveys in the Caribbean. It was agreed that an intercept survey would be the best method for collecting data for catch in this region. For effort information, the group discussed several viable methods such as a roving count survey or an aerial survey. C. Lilyestrom stated that the U.S. Fish and Wildlife Service has provided funding for the Puerto Rico Marine Recreational Fisheries Statistics Program. C. Lilyestrom stated that the goal of the project is to collect, store, analyze, manage and disseminate fishery-dependent, biological and socio-economical data on the marine recreational resources, their users, and their environment, in Puerto Rico, in support of management policies, strategies and tactics. There are several jobs associated with the project such as conducting a preliminary survey to obtain basic descriptors of the marine recreational fishery in Puerto Rico; preparation of data forms, logbooks, databases, intercept site lists and maps, standardized species codes, etc.; collection of data from tournament or "big game" fisheries; estimation of catch and fishing effort of marine anglers fishing from head/charter boats, shoreline, and private and rental boats; and development of data entry, analysis and reporting procedures. T. Tobias stated that the U.S. Virgin Islands utilized W/B monies to fund a recreational data assessment program on St. Thomas and St. Croix. He provided an

overview of the program. The U.S. Virgin Islands utilizes a roving creel survey with non-uniform probability sampling. The main objective of the program is to gather information on the activity patterns of recreational fishermen including catch, harvest, catch per unit effort by species, and by area fished. This information is fundamental in the formulation of management options to sustain the recreational fishery in the area. St. Croix and St. Thomas are divided into six and five sampling areas, respectively. Field work consists of fishermen interviews and fishermen counts from shoreline, piers and docks.

M. Osborn offered to provide some assistance to the U.S. Virgin Islands and Puerto Rico in developing the survey procedures and methods. She stated that NMFS would send the amount of funding it would take for the contractor to conduct the MRFSS in the Caribbean to U.S. Virgin Islands and Puerto Rico. She also stated NMFS would send the species, water body and other code lists. The NMFS will provide a copy of the current MRFSS data entry program as well as the site selection program to U.S. Virgin Islands and Puerto Rico. D. Donaldson stated that he would send Puerto Rico a copy of the current site register data base file structure. M. Osborn stated that the current contractor is exploring the possibility of using scanning technology to enter the recreational data. The group expressed an interest in this work and asked to be kept up-to-date on this activity. M. Osborn stated that she would provide one of the MRFSS staff members to assist the U.S. Virgin Islands and Puerto Rico in statistical estimation procedures and survey design. M. Osborn stated that she could provide this person during the summer months. D. Donaldson stated that the GSMFC could provide some support for this activity as well.

The group discussed the establishment of a marine recreational fishing license in the Caribbean. C. Lilyestrom stated that Puerto Rico is currently working on establishing a marine recreational fishing license. A bill in the legislature has already been passed establishing a license. Puerto Rico is has been authorized to implement a license program following approval of new regulations. The new regulations will go to public hearings in the near future. T. Tobias stated that the U.S. Virgin Islands do not have a marine recreational fishing license and the prospects for establishing one do not look hopeful. However, although there is no license, there are required stamps for harvesting various species in the U.S. Virgin Islands. It was noted that a fishing license provides a very useful sampling frame (if the license is designed to collect the appropriate information) and RecFIN(SE) is examining the possibility of using fishing license data bases as sampling frames. C. Lilyestrom stated that he would send the information regarding the fishing licenses to T. Tobias for his use in attempting to implement a marine recreational fishing license in the U.S. Virgin Islands.

#### Review of compilation of metadata related to changes in fishing regulations

D. Donaldson stated that the group discussed this issue at the last work group meeting. The group had decided to utilize existing information (GSMFC law summary documents) instead of recompiling the information. The group stated that the information is available for the Gulf region but wondered about the Caribbean. T. Tobias stated that the U.S. Virgin Islands currently compiles this type of information for their jurisdiction and has some historical information. C. Lilyestrom stated that Puerto Rico is in the process of implementing a procedure for compiling this information. The group will continue to pursue this issue and believed the next step will be the development of a metadata module for the FIN data management system.

### Night Fishing Activities

D. Donaldson stated that the Work Group addressed this issue at the last meeting and the group determined that the next step will be to examine the phone and intercept data to identify areas of significant night fishing in the Southeast. D. Donaldson presented the night fishing data compiled from the MRFSS telephone and intercept data. The group looked at night fishing distributions by mode and wave as well as private versus public access sites. Again, the shore mode has the highest occurrence of night fishing and most of the night fishing occurred at public sites. Also, the group examined the types of species that are targeted and caught during night fishing activities. After reviewing and discussing the data, the group decided that the next step would be to continue collecting information for the MRFSS site register. Information is currently being compiled about night fishing although this was just recently implemented. It is important for samplers to assess the presence of night fishing at a site and assign some type of pressure for that activity. The pressures may be obtained via roving counts or existing methods. The group decided that at the end of 1999, the information about night fishing in the site register should be examined to determine areas of significant activity. Also, the group discussed conducting an analysis of catch rates for species caught during the day versus night. Although the data are not overly abundant, there is enough to make some preliminary assessment about any differences between day and night fishing.

### Development of Fishing Tournament Sampling Methods

D. Donaldson stated that the work group has been tasked with developing a sampling protocol for fishing tournaments. He presented a list of existing saltwater fishing tournaments for the Southeast Region. D. Donaldson stated that he sent out a request for information about fishing tournament sampling methods prior to the meeting to help with the discussions. It was apparent that there are not many sampling activities regarding tournaments in the Southeast. He noted that he did receive some comment from Mark Farber from the NMFS Billfish Tournament Sampling program. M. Farber was concerned that RecFIN(SE) was not going to include the NMFS program. The group noted that it appears that the NMFS program is not aware of what is occurring in RecFIN(SE) and someone in the NMFS should provide some briefing to the NMFS Billfish Tournament Sampling program. D. Donaldson also noted that Ron Lukens talked with Tony Lowery with the NMFS Highly Migratory Program. That program is currently in the process of developing sampling strategies for fishing tournaments for highly migratory species. It was suggested that the RecFIN(SE) coordinate with the Highly Migratory Program in the development of these strategies. Unfortunately, T. Lowery was unable to attend the work group meeting but will be kept informed about the RecFIN(SE) activities regarding fishing tournament sampling. The group discussed possible methods for sampling tournaments. M. Osborn stated that a first step may be to develop a program where anglers voluntarily provide data about their tournament activities. This information can be collected via the Internet. M. Osborn said that the MRFSS could design the data form. T. Tobias stated that the U.S. Virgin Islands currently collects information from fishing tournaments. He has a data form that they use to collect data. The group decided that the U.S. Virgin Islands form would be a good starting point and the MRFSS staff can utilize that to develop the data entry form. It was also noted that there could be some type of incentives built into this approach such as providing feedback to the anglers in the form of posting summarized data about types of species landed, numbers, weights, etc. as well as providing a list of participating tournaments in the program as a form of advertising. The group agreed that for this approach to be successful, there needs to be some interaction with the tournament contacts. The contacts will be very important in getting

participants to participate in the program so it is essential that the tournament contacts be involved. If the contacts can be sold on the benefit of the sampling program, that will help ensure the tournament participants will provided the needed information.

**Being no further business, the meeting was adjourned at 3:10 p.m.**

**FISHERIES INFORMATION NETWORK  
MINUTES  
Wednesday, September 22, 1999  
Tampa, Florida**

Chairman Daniel Matos called the meeting to order at 9:00 a.m. The following members, staff and others were present:

**Members**

Kevin Ansen, AMRD, Gulf Shores, AL  
Page Campbell, TPWD, Rockport, TX  
Kerwin Cuevas, MDMR, Biloxi, MS  
Guy Davenport, NMFS, Miami, FL  
Bob Dixon, NMFS, Beaufort, NC  
Doug Frugé, USFWS, Ocean Springs, MS  
Stephen Holiman, NMFS, St. Petersburg, FL  
Christine Johnson, MDMR, Biloxi, MS  
Rick Leard, (proxy for S. Atran) GMFMC, Tampa, FL  
Craig Lilyestrom, PRDNER, San Juan, PR  
Ron Lukens, GSMFC, Ocean Springs, MS  
Daniel Matos, PRDNER, Mayaguez, PR  
Joe O'Hop, FFWCC, St. Petersburg, FL  
Dave VanVoorhees, NMFS, Silver Spring, MD

**Staff**

Dave Donaldson, GSMFC, Ocean Springs, MS  
Madeleine Travis, GSMFC, Ocean Springs, MS

**Others**

Carol Ballew, NMFS, St. Petersburg, FL  
Jennifer Lee, NMFS, St. Petersburg, FL  
Joe Moran, ACCSP, Washington, DC  
Martha Norris, FFWCC, St. Petersburg, FL

**Approval of Agenda**

The agenda was adopted as amended.

**Approval of Minutes**

The minutes from the Fisheries Information Network (FIN) meeting held on April 7, 1999 in La Parguera, Puerto Rico were approved with minor changes.

### **Discussion of Data Collection Plan**

R. Lukens reported on the development of a data collection plan for commercial fisheries. A list of finfish and invertebrate species in the Gulf of Mexico and the Caribbean was distributed to Committee members. Lukens stated that he hoped to be able to get the data on the priority species for a three to five year period to be used as a starting point. This will give the group a number to work with and determine the number of samples necessary. After this process has been utilized for a year or two, stock assessment and other needs should become apparent.

G. Davenport stated that ideally an assessment biologist from each state would be involved in the process to determine what needs to be done in which areas, and to assist in the development of a statistically valid survey design. National Marine Fisheries Service (NMFS) personnel and port agents would also be involved. Davenport explained the importance of coordinating this effort on all levels to ensure success and inquired as to the possibility of funding for state assessment personnel and meetings. D. Donaldson stated that the Gulf States Marine Fisheries Commission (GSMFC) would be able to pay travel expenses for state personnel to attend a meeting. Donaldson also noted that at the Data Collection Work Group meeting held recently in Atlanta, this subject was discussed under the Biological Sampling module of ComFIN. This module provides the basis for the types of information that needs to be collected and a basic design. After Committee discussion **R. Lukens moved to have staff plan for a meeting early in 2000 with each state being comfortable with membership on the Stock Assessment Panel or providing other recommendations. Also included would be two or three port agents and Caribbean personnel. The motion was seconded and passed unanimously.** D. Matos noted that a meeting of Caribbean port agents will take place in a few weeks and this subject can be discussed at that time. It was also noted that the Atlantic Coastal Cooperative Statistics Program (ACCSP) is dealing with this issue and will hold a meeting in December which D. Donaldson will be attending.

There was general discussion by the Committee on the species list and it was agreed that this is a limited list on which to collect data. Several adjustments were made to this list which will be presented at the Stock Assessment meeting for further refinement.

## **Subcommittee and Work Group Reports**

**Administrative Subcommittee** - D. Donaldson reported that the Administrative Subcommittee met via conference call in July (Attachment A). One of the issues discussed was changing the meeting schedule since it had been envisioned that eventually meeting once a year would be sufficient. Also, the last two fall FIN meetings were adversely affected by tropical storms and hurricanes. Initially the RecFIN(SE) and the ComFIN Committees each met twice a year for one and one-half days and now meet for one-half day each, with the FIN Committee meeting for one full day. In consideration of these facts, the Subcommittee recommended that these Committees meet once a year. This schedule would allow time for discussion of funding issues and development of statements of work well within appropriate deadlines for submission. **R. Lukens moved to accept the recommendation of the Administrative Subcommittee to have the FIN, RecFIN(SE), and ComFIN Committees meet once a year in early summer. The motion was seconded and passed unanimously.**

Donaldson reported that the Administrative Subcommittee also addressed the issue of head boat sampling at the request of Andy Kemmerer. The Subcommittee nominated B. Dixon and D. Donaldson for membership on an ad hoc work group and requested that the FIN Committee select appropriate personnel from NMFS, Texas, and Florida for inclusion in the work group. Donaldson also noted that the ACCSP is conducting a pilot for-hire (both charter boats and head boats) survey similar to the one conducted in the Gulf of Mexico. This survey will be conducted in South Carolina and will compare the mandatory log book with the captain's telephone survey and the Marine Recreational Fisheries Statistics Survey (MRFSS) random digit dialing. The Subcommittee recommended that the FIN Committee await the outcome of the South Carolina pilot study before making any decisions concerning head boat sampling in the Gulf and the Caribbean. B. Dixon noted that the proposal for the South Carolina pilot study has been submitted to the ACCSP Operations Committee but has not yet been approved for funding. Since this is a high priority item it is anticipated that funding will be approved. **R. Lukens moved to accept the recommendations of the Administrative Subcommittee concerning head boat sampling. The motion passed unanimously.** The Committee then addressed the issue of membership to the ad hoc work group. D. VanVoorhees was suggested as the NMFS representative, P. Campbell from Texas, and J. O'Hop

from Florida. The Committee also agreed to consider adding a member from the ACCSP at a later time.

FIN/ACCSP Compatibility Work Group - D. Donaldson reported that the FIN/ACCSP Compatibility Work Group met in May in Washington, D.C. and noted that the initial task for this Work Group was to compare the program design documents for the FIN and the ACCSP (Attachment B). The Work Group agreed to identify areas that the two programs are working on and coordinate activities to ensure comparability and compatibility. Donaldson noted that one of the goals of both FIN and ACCSP is to have the regional fishery management councils utilize these programs for their data needs. The Work Group discussed various ways of getting the councils more involved in the process.

Donaldson reported that as a result of the work group meeting, one recommendation made to the FIN Committee was to form an ad hoc work group to review definitions. Other areas where both programs are in developmental stages include, data management, implementation strategies, permitting and quota monitoring, and standard codes. Since the ACCSP data management system is up and running, the FIN will utilize this to aid in developing their data management prototype. Donaldson also noted that the ACCSP is conducting implementation meetings with the Atlantic states. Donaldson reported that both the FIN and the ACCSP Permitting Work Groups will hold a joint meeting in 2000. Donaldson also attended a meeting of the ACCSP Standard Codes Committee on behalf of the ComFIN Data Collection Work Group.

As a result of the recommendation made by the FIN/ACCSP Compatibility Work Group, **R. Lukens moved to charge the Administrative Subcommittee with the task of reviewing and establishing compatible definitions with the ACCSP program design document. The motion was seconded and passed unanimously.** Lukens also addressed the issue of the need for a closer relationship with the councils, and noted that he and R. Leard of the Gulf of Mexico Fishery Management Council (GMFMC) had discussed the matter. Leard noted that the January 2000 GMFMC meeting would be an opportune time for the FIN Committee to give a presentation on the activities of the FIN program. **R. Lukens moved to accept the Administrative Subcommittee report and the FIN/ACCSP Compatibility Work Group report. The motion was seconded and passed unanimously.**



FIN Implementation Work Group - D. Donaldson reported that the FIN Implementation Work Group met in August 1999 having been charged with developing a funding decision process since there is now dedicated funding for the FIN program (Attachment C). Donaldson noted that there has been a difference of opinion on how the GulfFIN funds should be allocated. The Work Group determined that it was not their decision to make and recommended that this issue should be brought to the GSMFC State-Federal Fisheries Management Committee (S-FFMC) at their October 1999 meeting. **P. Campbell moved to accept the recommendation of the FIN Implementation Work Group to have the GSMFC State-Federal Fisheries Management Committee address the issue of expenditure of GulfFIN funds, either for Gulf state partners only or both state and federal partners. The motion was seconded and passed unanimously.** Donaldson noted that when funding becomes available in the Caribbean, the Caribbean Fisheries Management Council will provide oversight for Puerto Rico and the U.S. Virgin Islands.

During discussion on the need for a FIN implementation strategy, Donaldson noted that state personnel in Louisiana, Mississippi, Alabama, and Florida are conducting the MRFSS, however in Texas it will be necessary to determine if their data is compatible. The Gulf states are currently working on implementing trip ticket programs. Donaldson noted that there was discussion on placing a high priority on collecting social and economic data and possibly doing some preliminary work on collecting these data as well as catch and effort data. S. Holiman noted that within the next year the Southeast Regional Office of NMFS will be conducting a pilot survey in North Carolina and Louisiana using the permit database as the sampling frame. M. Osborn had requested that this Committee consider moving the timetable up for the collection of commercial social and economic data. Donaldson noted that the ACCSP is doing a pilot study in Georgia on how best to collect this information, and it may be beneficial to await the outcome of this pilot study. Donaldson also noted that the FIN Social/Economic Work Group is recommending that they work with the ACCSP Economic and Social Sciences Committee. There was Committee discussion on the need for commitment to fund the collection and analysis of social and economic data. R. Lukens noted that funding for the GulfFIN program may increase in the future, allowing for additional social and economic data collection and analysis. The Committee agreed to await the outcome of the ACCSP study to pursue the issue of social and economic data collection and analysis.

The Committee reviewed the funding decision process developed by the Implementation Work Group at the meeting held in August. Discussion ensued on the budget process, to include submission of projects for funding. R. Leard requested the sharing of information with the GMFMC on a regular basis, and R. Lukens suggested that GSMFC staff be invited to attend the upcoming NMFS/GMFMC Operations Plan meeting. Lukens will pursue this with L. Simpson and B. Hogarth. After Committee discussion, **R. Lukens moved to delete the following from the list of criteria developed by the Work Group: *the initial investment in the project is for a one time capitalization to build the FIN infrastructure, rather than being operational in nature.* The motion was seconded and passed unanimously. Lukens also moved to delete: *the project is supported by matching partner funds, where applicable.* The motion was seconded. After further Committee discussion, **Lukens withdrew the last motion.****

**K. Cuevas moved to accept the Implementation Work Group Report with the deletion of the above mentioned item. The motion was seconded and passed unanimously.**

Social/Economic Work Group - D. Donaldson reported to the Committee on a meeting held in May by the Social/Economic Work Group (Attachment D). The purpose of the meeting was to review the social and economic activities under FIN and develop Quality Assurance/Quality Control (QA/QC) for mail surveys. Donaldson noted that through the MRFSS, NMFS is conducting an add-on to collect social and economic data. There was concern by the Work Group that the FIN had not been more involved in the development of this add-on. The Work Group recommended that the FIN, via the Social/Economic Work Group, become more involved in the development of social and economic data collection and management activities of the MRFSS. S. Holiman noted that there was not an opportunity provided for input by the GMFMC or the GSMFC in the southeast since the survey instrument being utilized was developed in the northeast and also because of time constraints. Holiman also stated that, where possible, sufficient lead time be provided when a survey effort is going to occur so that partners being impacted will have time for input and comment. D. VanVoorhees requested that the Work Group include B. Gentner, an economist from NMFS headquarters. After Committee discussion, the wording of the above recommendation was changed to read: **It was recommended that the FIN, via the Social/Economic Work Group, participate in all aspects of the development of social and economic data collection and management**

activities of the MRFSS. R. Lukens moved to accept the amended recommendation of the Social/Economic Work Group. The motion was seconded and passed unanimously.

R. Lukens moved that the FIN, through its Social/Economic Work Group, be considered a full partner in all aspects of collection and management of social and economic data. The motion was seconded and passed with GMFMC opposed, Florida opposed, and NMFS abstaining.

Donaldson reported that the Work Group discussed the perception that the social and economic data are not analyzed on a regular basis and are not regularly used in management decisions. The Social/Economic Work Group recommended that when an economic add-on is being conducted in the Southeast, additional time be set aside at wave meetings to review the social and economic data. After Committee discussion on this recommendation, S. Holiman moved to change the wording of the recommendation to: **when an economic add-on is being conducted in the southeast, opportunities be made available for the partners to review the social and economic data. The motion was seconded and passed unanimously.**

Donaldson reported that the Social/Economic Work Group then discussed the for-hire sector and decided that they will not make any recommendations pending the outcome of the ACCSP pilot study regarding social and economic data.

Donaldson noted that the Work Group discussed the need for the ACCSP and FIN to use the same methods for collecting social and economic data (mail, phone, interview), however some members believed that it wasn't necessary for the method of collection be the same as long as the types of data collected were the same. Donaldson stated that after the ACCSP pilot study is evaluated a similar study could be conducted in the Gulf or Caribbean using the same methods.

The Social/Economic Work Group then addressed membership in this group and discussed the fact that there were not many economists or sociologists on the Work Group. Now that there are more social and economic issues being addressed, the Work Group recommended that the FIN Committee readdress the membership of the Social/Economic Work Group. The group recommended that Ron Lukens and Lisa Kline be removed from the group and 2 - 4 people with social and economic expertise be placed on the Work Group. Donaldson suggested that a letter be sent to FIN Committee members requesting names for membership on the Work Group.

Membership should include personnel from federal, state, and Caribbean agencies, as well as universities. R. Lukens noted that J. Moran suggested that a representative from the ACCSP Committee on Social and Economic Sciences also be included. D. VanVoorhees suggested that a NMFS headquarters economist be included on the Work Group. **R. Leard moved to remove R. Lukens , L. Kline, and B. Kojis from the Social/Economic Work Group and have staff send a letter to FIN Committee members requesting nominations to this Work Group. The motion was seconded and passed unanimously.**

Donaldson reported that the Social/Economic Work Group then addressed the inclusion of a section on mail surveys in the Quality Assurance/Quality Control document. The Work Group developed this section and it was distributed to Committee members for their review prior to this meeting. **S. Holiman moved to adopt the mail survey section for inclusion in the Quality Assurance/Quality Control document. The motion was seconded and passed unanimously.**

#### **Discussion on Quota Monitoring**

D. Donaldson reported that the issue of quota monitoring was raised during the recent ComFIN Implementation meeting and it was suggested that a list be compiled of species currently being quota monitored. Donaldson noted that members of the Biological/Environmental Work Group will be working with the ACCSP on recreational quota monitoring and suggested that it would be beneficial to have the same involvement concerning commercial quota monitoring. After lengthy Committee discussion, **R. Lukens moved to give the issue of commercial quota monitoring to the Data Collection Work Group to identify quota monitoring programs currently in place, including IVR, and to examine alternatives to monitor quotas. The motion was seconded and passed unanimously.**

#### **Discussion of Establishing For-Hire as Separate Sector**

D. Donaldson reported that this subject was a result of the ComFIN Implementation meeting and it was suggested that the for-hire industry be considered a separate sector from the recreational fishery. D. Van Voorhees noted that this has been discussed frequently in the Recreational Statistics Subcommittee of the ACCSP for both data collection and management purposes. R. Lukens noted

that the for-hire sector is approached from a different perspective than the private boat and shore mode fisheries, and there are more implications for management than for data collection. R. Leard noted that the Magnuson Act clearly defines recreational and commercial fish. Committee discussion ensued and it was agreed that the Committee will take no action on this issue at this time.

### **Operations Plan**

D. Donaldson reported to the Committee that all FIN activities for 1999 had either been completed or would be by the end of this year. A status sheet was distributed for review (Attachment E).

The FIN Operations Plan for 2000 was reviewed by the Committee and the revised version of this document constitutes an administrative record for this portion of the meeting. **D. Frugé moved to approve the 2000 FIN Operations Plan with inclusion of the modifications discussed and any other editorial changes. The motion was seconded and passed unanimously.** The revised Operations Plan will be mailed to Committee members.

### **Review of FY2000 FIN Funding Priorities**

A list of activities for funding consideration in 2000 was distributed to Committee members (Attachment F). Donaldson reported that these activities were accepted by the S-FFMC for inclusion in the 2000 Cooperative Agreement.

### **Status of Atlantic Coastal Cooperative Statistics Program**

J. Moran reported that the ACCSP has been working on prioritizing funding activities and developing a funding process. A series of implementation meetings were held in various locations on the Atlantic coast. This was an educational activity for state personnel who were not familiar with the operation of the ACCSP, and also encouraged personnel to compare their current data collection and management processes with the ACCSP model. These implementation meetings were also utilized to assist personnel from various state and federal agencies to recognize and alleviate duplication of effort. Moran noted that quota monitoring is a good example of this situation since several northeast states had IVR systems as well as the NMFS northeast region. At the

implementation meetings these agencies began discussing ways to eliminate this duplication of effort and expense. As a result of these successful meetings, Moran stated that he will recommend to the ACCSP Coordinating Council that regional implementation meetings continue to be held.

Moran reported Charlie Treat has been retained to do public outreach for the ACCSP Socio-Economic Pilot Study which is being conducted in the northeast for the summer flounder. The Socio-Economic Pilot Study will begin interviews in the northeast in January 2000. A socio-economic study of the blue crab fishery in Georgia is ongoing. Treat will also develop an overall strategy for public outreach for the ACCSP.

Moran reported on several issues that will be considered by the ACCSP Coordinating Council at their upcoming meeting. A confidentiality policy has been drafted for review by the Council. The Computer Technical Committee has been reviewing proposals for the location of the host site for the ACCSP data management system, and their recommendation will be presented to the Coordinating Council. Moran stated that the Coordinating Council will also consider funding proposals received as a result of a Request for Proposal (RFP).

#### **Time Schedule and Location for Next Meeting**

**R. Lukens moved to have the next FIN meeting the week of June 12, 2000 in Austin, Texas with an alternate of the week of June 19 in San Antonio, Texas or New Orleans, Louisiana. The motion was seconded and passed unanimously.**

#### **Other Business**

R. Lukens reported that he and D. Van Voorhees recently attended the Pacific RecFIN meeting and gave a presentation on the FIN program and a report on the Charter Boat Survey. The Pacific RecFIN Committee expressed interest in the Charter Boat Survey and invited Lukens and Van Voorhees back to give a full report when the Survey is finalized.

**There being no further business, the meeting was adjourned at 5:00 p.m.**

FIN Administrative Subcommittee  
Conference Call Summary  
July 21, 1999

The meeting was called to order at 9:00 a.m and the following people were present:

Lisa Kline, ASMFC, Washington, DC  
Ron Lukens, GSMFC, Ocean Springs, MS  
Maury, Osborn, NMFS, Silver Spring, MD  
Bob Dixon, NMFS, Beaufort, NC  
Doug Frugé, USFWS, Ocean Springs, MS  
Daniel Matos, PRDNER, Mayaguez, PR  
Joe Shepard, LDWF, Baton Rouge, LA  
Dave Donaldson, GSMFC, Ocean Springs, MS

Purpose of Meeting

R. Lukens stated that the purpose of the meeting was to discuss a proposed change in the meeting schedule for FIN as well as select members for an ad hoc work to address sampling methods for head boats.

Meeting Schedule Changes

R. Lukens noted that D. Donaldson distributed some thoughts about modification of the FIN meeting schedule. The proposed changes to the meeting schedule were to meet only once a year. The annual meeting would be held during the summer which would allow for planning of funding activities to be discussed and timely submission of the appropriate funding documents. It would also allow for enough time for the appropriate bodies in the Gulf and Caribbean to review and approve the list of funding activities before the funding document submission deadline. M. Osborn stated that she did not have a problem with the proposed changes but pointed out that there still needs to be a funding decision process developed by FIN. The funding decision process will provide long-term guidance to the program regarding the activities that will be funded. The development of this process will be addressed by the Implementation Work Group in August 1999. **The group recommended that the proposed change to the FIN meeting schedule be forwarded to the FIN Committee for discussion at the September meeting.** The revised meeting schedule proposal is attached.

Ad Hoc Head Boat Work Group

R. Lukens stated that the group needed to select the appropriate personnel for an ad hoc work group to address sampling of head boats. The following personnel were nominated and will be forwarded to the FIN Committee for their consideration at the September meeting:

Bob Dixon  
Dave Donaldson  
MRFSS representative

Texas representative  
Florida representative

The FIN committee will select the appropriate personnel for the spots that specific people were not identified. The group then discussed the charge to this work group. It was suggested that the group should explore the current methods for sampling head boats as well as examine alternative methods. J. Shepard stated that this has been done in the past and a decision needs to be made if the current captain's telephone survey method is adequate to survey head boats. J. Shepard stated that it would be better if only one method was used to collect information from charter and head boats. B. Dixon noted that although charter and head boats operate similarly in Louisiana, that is not always the case in the rest of the Gulf of Mexico. It may be premature to believe that the captain's telephone survey is the best method for sampling head boats. B. Dixon noted that the ACCSP will be conducting a study in South Carolina which will examine three methods (MRFSS random-digit dialing, captain's telephone survey, and 100% mandatory log books) for sampling both charter and head boats. It might be beneficial for the FIN to await the outcome of this study before making any decisions about head boat sampling methods. R. Lukens suggested that the FIN recommend to the ACCSP that the South Carolina for-hire study be funded for 2000. It was suggested that the FIN head boat work group could work in conjunction with the ACCSP to address the issue of head boat sampling. **The recommendations regarding head boat sampling from the Administrative Subcommittee are:**

- FIN await the outcome of South Carolina for-hire study before making any decisions about head boat sampling methods in the Gulf of Mexico;
- FIN Head Boat Work Group will document any operational issues in the Gulf of Mexico that may be different than what is found in South Carolina and ensure that these issues are addressed;
- FIN Head Boat Work Group will review the South Carolina for-hire study; and
- FIN Head Boat Work Group should interact with the South Carolina for-hire study through periodic updates and other appropriate means regarding the study. It was noted that there is also overlap between the FIN work group and the ACCSP For-Hire Subcommittee that will help facilitate this interaction

**There being no further business, the call was adjourned at 9:45 a.m.**



## **Discussion Items for the Fisheries Information Network (FIN) Funding Process**

The Commercial Fisheries Information Network (ComFIN) and the Southeast Recreational Fisheries Information Network [RecFIN(SE)] is established as a state-federal cooperative program to collect, manage, and disseminate statistical data and information on the marine commercial and recreational fisheries of the Southeast Region. In order to ensure timely submission of the RecFIN(SE)/ComFIN cooperative agreement, the FIN Committee needs to develop a process for developing recommendations for the next year's activities that will allow all partners to be involved in the discussions as well as allow for submission of the cooperative agreement by the established deadline. The following are some thoughts about how to accomplish this:

- Change the meeting schedule of the RecFIN(SE), FIN and ComFIN Committees from twice a year to once a year. In recent meetings, the Committees have not utilized the entire time period allotted for discussion so reducing the number of meetings should not hamper the Committees' ability to address all the necessary issues.
- The meeting will be scheduled during the summer which will allow the FIN to discuss potential activities for funding prior to submission of the cooperative agreement. The time period needs to be late enough in the year that the Committee will have some idea about federal appropriations for the program and early enough to be able to submit the cooperative agreement by the deadline.
- Review of FIN recommendations by the State/Federal Fisheries Management Committee. This meeting would follow the RecFIN(SE), FIN and ComFIN meetings and allow for final approval of the FIN funding recommendations affecting the Gulf of Mexico. A similar meeting will be scheduled in the Caribbean with the appropriate agencies, contingent upon the availability of funding for Caribbean activities.

FIN/ACCSP Compatibility Work Group  
Meeting Summary  
May 11, 1999  
Washington, DC

The meeting was called to order at 8:35 a.m and the following people were present:

Lisa Kline, ASMFC, Washington, DC  
Ron Lukens, GSMFC, Ocean Springs, MS  
Joe O'Hop, FMRI, St. Pete, FL  
John Hoey, NMFS, Silver Spring, MD  
Page Campbell, TPWD, Rockport, TX  
Dee Lupton, NCDMR, Morehead City, NC  
Bruce Joule, MDMR, West Boothbay Harbor, ME  
Mark Alexander, CDEP, Old Lyme, CT  
Joe Moran, ASMFC, Washington, DC  
Mike Cahall, ASMFC, Washington DC  
Dave Donaldson, GSMFC, Ocean Springs, MS

Purpose of Meeting

D. Donaldson stated that the purpose of the meeting was to discuss and develop the mission of the work group. The group needs to determine the direction of the work group and develop a plan for addressing the issues related to both Fisheries Information Network (FIN) and Atlantic Coastal Cooperative Statistics Program (ACCSP). D. Donaldson pointed out that the initial task of the group was to compare the program design documents for the FIN and ACCSP. It was noted that at the last meeting, the group reviewed the two documents and although that was a successful activity, the work group cannot do that at every meeting. Therefore, the group needs to determine what the mission of the group will be. It was pointed out that there needs to be periodic review of the documents however not at every meeting. It was suggested that for each meeting, the group identify areas the both programs are working on and discuss how the two programs can coordinate the activities to ensure comparability and compatibility among the programs. The group believed that this was a good approach and decided that this should be how the group operates for future meetings. The group began discussing regional differences in terms of data elements. It was noted that in the ACCSP, it will be necessary to add some additional data elements due to regional differences. These elements will be collected as well as the minimum set of data agreed upon by the ACCSP. This issue will be discussed during the implementation meetings being conducted on the Atlantic coast. It was noted that the regional topic is not an issue in the Gulf of Mexico since the geographic area is much smaller and there are no real regional differences, in terms of collection of data, in the Gulf of Mexico.

The group also discussed getting the regional fishery management councils more involved in the FIN and ACCSP. It was pointed out that one of the goals of both FIN and ACCSP is for the councils to utilize these regional programs for their data needs and requests. It is imperative that the regional councils become more integrally involved in these program and the group discussed ways for integrating the regional councils into FIN and ACCSP. L. Kline stated that there are people involved in the ACCSP that give updates to the South Atlantic, Mid-Atlantic, and New England

Councils on a periodic basis. R. Lukens noted that FIN staff has discussed providing more routine updates to the Gulf of Mexico Council as well. After some discussion, the group decided that the FIN and ACCSP staffs should meet with the Council staffs to discuss this issue. It was decided that the FIN and ACCSP staffs should provide an overview of the respective programs. During these presentations, it will be important to point out the areas where the Councils will be affected and how they can provide input into these systems.

#### Review of the Program Design Document

J. O'Hop stated that there were several areas in the FIN Program Design Document that needed to be discussed by the group. The group began reviewing and comparing the FIN and ACCSP documents. The first section addressed was the *Policies and Goals* section of the FIN document. It was noted that the ACCSP has some additional policies that are not included in the FIN plan and R. Lukens wondered if the FIN should address these issues and develop the appropriate policy statements. The group discussed this topic and it was noted that the two policy statements developed by ACCSP and not FIN are in areas the FIN is just beginning to address (outreach and social and economic data). D. Donaldson stated that when those groups meet, one of the tasks can be the development of a policy statement regarding the appropriate issues. The group also discussed the need for a *Goals* heading in the FIN plan. L. Kline stated that the goals in the ACCSP plan are items that are long-term goals and something the program is striving to achieve and the group should attempt to identify similar goals for FIN. After some discussion, the group believes a goal regarding the requirement of a unique identifier for all commercial, recreational, and for-hire fishermen should be developed for the FIN. The next section discussed by the group was the *Standard Definitions* section. It was noted that the ACCSP has a much more comprehensive list of definitions than the FIN. After some discussion, the group recommended that the FIN examine the ACCSP definitions and determine if they meet the needs of the FIN. This issue will be addressed at the next FIN meeting and will probably be addressed by an ad hoc work group. The next section addressed was the actual data collection modules. As the group began to review the various tables for the commercial and recreational components of the FIN, it was suggested that it really was not in the purview of this group to compare and contrast these components. This task would be better addressed by the various FIN work groups and it was agreed to charge the appropriate work groups to undertake this task at their upcoming meetings.

#### Coordination of Activities between FIN and ACCSP

The group identified several areas where both the FIN and ACCSP are currently in a developmental stage and believed there would be some benefit in coordinating the efforts among the two programs. The areas that were identified included data management, implementation strategies, permitting/quota monitoring, and standard codes.

M. Cahall provided an overview of the current ACCSP Data Management System. The prototype is currently up and running. There are official data for the NMFS-NE logbook program and the Florida trip ticket data will be loaded into the system in the near future. To date, the feedback received from the various users has been positive. D. Donaldson stated that with funds from the GulfFIN line item, FIN will begin development of the FIN data management prototype using the Louisiana trip ticket program. This task will utilize much of the hard work and effort put forth by the ACCSP. The GSMFC, Louisiana and the contractor (ICF Kaiser) will begin addressing this issue later this year. It was noted that in the spirit of cooperation, the FIN and ACCSP should

work on jointly developing the additional modules for data management. M. Cahall noted that if there are significant differences between the FIN and ACCSP data elements, there will need to be extensive modifications needed to make the two systems compatible. L. Kline stated that if there are differences, the group need to determine if there is a logical reason for the differences. The group discussed the number of people necessary to finish the development and maintain the system and determined that it would take about 4 or 5 people (both FIN and ACCSP personnel) to complete the development of the system and about 3 or 4 people for ongoing maintenance. This would be accomplished with FIN and ACCSP personnel only. It would not include utilizing a contractor. The other option would be to continue development of the system using a contractor. The group discussed the issue of utilizing FIN and ACCSP staff vs. a contractor to complete the system but no consensus was achieved. D. Donaldson pointed out that although the ACCSP currently has personnel to address this issue, the FIN has yet to hire a person. However, he stated that the GSMFC will probably be hiring a person within a short period of time.

J. Moran stated that the ACCSP is currently conducting implementation meetings with all the states on the Atlantic coast. The purpose of these meetings are for all the players within a jurisdiction to sit down and work out the details of how to actually implement the ACCSP within that jurisdiction. He and M. Cahall have already attended one of these meetings and another is scheduled for later this week. It was pointed out the NMFS-Southeast Region will be participating in the meetings involving the South Atlantic states. Since the NMFS-Southeast Region encompasses both the South Atlantic and Gulf states, it would be useful for NMFS to have an idea of the activities they will be involved in related to data collection and management for the Gulf of Mexico as well as the South Atlantic. R. Lukens stated that during the discussions regarding identification and selection of activities for funding in 1999 in the Gulf of Mexico, partners discussed issues concerning the division of labor among the partners. It appears that these types of issues are similar to the ones that will be discussed at the ACCSP meetings and there seems to be a need for these meetings in the Gulf of Mexico as well. To help ensure that NMFS has a clear picture of its tasks, it was suggested that the FIN set up similar meetings in the Gulf of Mexico. D. Donaldson will attend one of the ACCSP meetings (probably in the South Atlantic region) to get a feel for the dynamics of the meeting. Also, both the FIN and ACCSP issues will be discussed at the Florida meeting to alleviate the need for two separate meeting in Florida. D. Donaldson stated that he will attempt to schedule the meetings during the summer of this year to coincide with the ACCSP meeting.

D. Donaldson stated that at the last meeting, the FIN discussed the development of a Permitting Work Group to begin addressing the issue of licenses and permits and developing a process for integrating the permitting and licenses systems with the catch data. J. Moran stated that the ACCSP is also looking at this issue and this provides a perfect avenue to jointly address the issue to ensure compatibility between the programs. Once the respective groups have been established, D. Donaldson and J. Moran will work together to set up a meeting to discuss the necessary issues. The group also examined working together on the recreational quota monitoring issues. The ACCSP has a group that will be addressing this issue later this year. At the last RecFIN(SE) meeting, the RecFIN(SE) Committee tasked the RecFIN(SE) Biological/Environmental Work Group to begin examining this issue. It was suggested that a subset of the RecFIN(SE) Biological/Environmental Work Group be selected to participate in the upcoming ACCSP meeting. D. Donaldson stated that he would contact the membership and let J. Moran know who to include from the FIN.

The last two issues discussed by the group related to standard codes. The first related to the

extensive list of standard codes for a variety of different items (species, gears, etc.) already developed by the ACCSP. It was suggested that the ComFIN Data Collection Work Group examine the existing list of codes and ensure that they cover all possible situations in the Gulf of Mexico. The other issues related to water body codes which is still not resolved within the ACCSP. The ACCSP has a Standard Codes Committee that will be addressing this issue in the near future and it was suggested that it would be beneficial to have Gulf of Mexico representation at this meeting so an agreed upon method can be developed for creating water body codes. D. Donaldson suggested that Joey Shepard (Louisiana Department of Wildlife and Fisheries) be asked to participate in this meeting. In the event that he could not attend, P. Campbell would be willing to attend the meeting. D. Donaldson stated that he would contact J. Shepard and check to see if he would be available to attend the meeting and let J. Moran know. It was also suggested that D. Donaldson contact each state and ask them to compile a list of inshore water body codes that are used in their state. This information will be provided to J. Moran for the meeting.

**There being no further business, the meeting was adjourned at 2:30 p.m.**

FIN Implementation Work Group  
Meeting Summary  
August 16, 1999  
Atlanta, Georgia

The meeting was called to order at 9:10 a.m. and the following people were present:

Guy Davenport, NMFS, Miami, FL  
Page Campbell, TPWD, Rockport, TX  
Toby Tobias, USVIDFW, St. Croix, VI  
Maury Osborn, NMFS, Silver Spring, MD  
Daniel Matos, PRDNER, Mayaguez, PR  
Dave Donaldson, GSMFC, Ocean Springs, MS

Purpose of the Meeting

D. Donaldson stated that the main purpose of the meeting was to review the products developed from the ComFIN implementation meetings and develop a report from the materials as well as develop a funding decision process, review and evaluation criteria, guidelines and implementation strategy for FIN.

Development of a ComFIN Implementation Report

D. Donaldson stated that the Gulf states, GSMFC, and NMFS met in July in New Orleans to discuss implementing ComFIN. One of the tasks for this group is to develop a report regarding the implementation of ComFIN. A meeting summary of the implementation meetings was provided to the work group and it was suggested that some introductory language be added and the bulleted items from the summary be incorporated into the report. The group discussed adding some information about the U.S. Virgin Islands and Puerto Rico regarding their commercial sampling programs. The group reviewed the meeting summary and made several changes. The draft implementation report is attached and represents the administrative record for this portion of the meeting.

Development of Funding Decision Process

D. Donaldson stated that the FIN discussed the need for a funding decision process, similar to the one developed by ACCSP. In the past, there have not been funds available for operational activities however with the creation of the GulfFIN line item, there needs to be a process for determining how the funds will be spent among the partners. M. Osborn and G. Davenport stated that they are concerned that the funds appropriated under the GulfFIN line item are not available to the federal partners of the program. D. Donaldson stated that the language associated with the line item clearly stated that the GulfFIN funds are to be used by the Gulf states only. M. Osborn noted that is one interpretation of the language and there are differing views about how the money can be spent. M. Osborn felt that NMFS is being left out of the loop and not being treated as a full partner. After some discussion, the group decided that this work group was not the appropriate body to determine how the money should be spent and **recommended to the FIN that the GSMFC State/Federal Fisheries Management Committee (S/FFMC) address the issue of how the GulfFIN line item should be allocated: to state partners only or both state and federal**

**partners, at their upcoming meeting in October.** D. Donaldson noted that the FIN Administrative Subcommittee discussed the possibility of reducing the number of FIN Committee meetings from twice a year to once a year. M. Osborn stated that there needs to be a list of funding priorities developed before the annual FIN meeting. This funding priority list will be developed at the subcommittee/work group level. The recreational (Biological/Environmental), commercial (Data Collection) and social/economic (Social/Economic) components will be charged with developing funding priorities for the upcoming year. It was noted that a clear charge to each of these groups needs to be developed so useful products are produced. Budgetary and technical reviews need to be incorporated into the process. It is important that realistic budgets be developed to ensure the funding is used in the most efficient manner. The technical review of the proposed activities will be part of subcommittee/work group charges. The activities will be reviewed prior to implementation of the tasks. Once the groups have presented their recommendations, the FIN Committee will review and consider which activities to fund for the upcoming year. Once the FIN Committee agrees upon the activities, the list needs to be approved by the appropriate bodies in the Gulf of Mexico and Caribbean. For the Gulf of Mexico, the S/FFMC will provide final approval and in the Caribbean, it will be the Caribbean Fishery Management Council.

#### Development of Guidelines and Review and Evaluation Criteria

The group developed guidelines and review and evaluation criteria to be used by the appropriate subcommittees/work groups. The group utilized the ACCSP process as a starting point. The FIN funding decision process is attached and represents the administrative record for this portion of the meeting.

#### Discussion of FIN Implementation Strategy

D. Donaldson noted that there may not be a need for an implementation strategy for FIN. On the recreational side, the program is basically implemented. In the states of Louisiana through Florida, state personnel are conducting the MRFSS. In Texas, there is a need to make their data available and ensure that they are compatible. This is a task that the RecFIN(SE) Committee is addressing. With the availability of funds for the Caribbean, the MRFSS methodology will be implemented in that region as well. On the commercial side, the Gulf states are working on implementing trip ticket programs. This is the first step in implementing a cooperative data collection program. Once the trip tickets are in place, information about detailed effort, biological sampling, social/economic data, and discards can be collected. M. Osborn stated that there may be a need to begin collecting social and economic information before full implementation of the trip ticket system. D. Donaldson noted that you need the trip ticket system in place before you can collect the social and economic data since the trip ticket program identifies the universe from which you will be sampling. Although it has never been formally stated, collection of the catch and effort data is the highest priority to the FIN. M. Osborn stated that she understood that but there is a real need for social and economic data and these types of data might be as high a priority as catch and effort and the group should consider the collection of social and economic data at the same level as catch and effort.

#### Other Business

M. Osborn stated that funds are available to begin recreational data collection in the Caribbean. The MRFSS methods will be used and NMFS will work with Puerto Rico and U.S.

Virgin Islands to coordinate the data collection activities. Sampling will begin in Wave 6 of this year and continue for three waves.

**There being no further business, the meeting was adjourned at 3:45 p.m.**



## **Funding Decision Process for FIN**

The Commercial Fisheries Information Network (ComFIN) and the Southeast Recreational Fisheries Information Network [RecFIN(SE)] are state-federal cooperative programs to collect, manage, and disseminate statistical data and information on the marine commercial and recreational fisheries of the Southeast Region. All proposals should follow the current format for cooperative agreements being utilized in the Southeast. The following process is provided as guidance to program partners and are consistent with current federal guidelines.

### **Guidelines**

The following guidelines are proposed to assist State/Federal Fisheries Management Committee and Caribbean Fishery Management Council decisions on funding proposals:

- The FIN Committee is the appropriate body to review proposals and make funding recommendations to the State/Federal Fisheries Management Committee and Caribbean Fishery Management Council.
- Existing program partner funds are not expected to be replaced with new FIN funds, subject to current funding levels.
- After establishment of programs, the responsible partner(s) will assume long-term operational costs using a combination of partner and FIN funds.
- For the short-term, FIN funds will not be used for current programs in jurisdictions with established resources. Partners with existing programs that do not meet FIN standards may receive funds to bring their program to FIN standards.
- Even though a large portion of available resources may be allocated to one or more jurisdictions, new systems (including prototypes) will be selected to serve all partners' needs during the implementation phase.

### **Steps in the Funding Decision Process**

1. Annual Development of FIN Priorities
2. Review & Recommendations to the State/Federal Fisheries Management Committee and Caribbean Fishery Management Council
3. Approval/Disapproval by State/Federal Fisheries Management Committee and Caribbean Fishery Management Council

### **Development of FIN Priorities**

The subcommittee and work groups will develop a list of funding priorities prior to the annual FIN meeting (May/June) through meetings of the groups. The priority list will be based on the annual Operations Plan for that calendar year. This list will be approved by the FIN Committee.

## Review and Evaluation

The review and evaluation of all activities will take into consideration the following criteria, with no priority implied:

- The project benefits are region-wide in scope, pertain to all fisheries, and address regional questions or policy issues.
- The project is required by federal or state legislation (e.g., MSFCMA, ACFCMA, MMPA, ESA, or other acts).
- The project will provide early success in implementing the FIN, a quick payback, and a large return on investment.
- Data provided by the project are transferable to other FIN partners, and demonstrate the practical application of the FIN.
- The project will result in substantial improvement to current data collection and data management systems, in a cost-effective manner
- The project will fill large gaps in information, versus historical database transformation.
- The project will result in high quality data that can be utilized immediately for fisheries assessment and management.
- The initial investment in the project is for a one time capitalization to build the FIN infrastructure, rather than being operational in nature. **(FIN needs to discuss)**
- The project provides the capability to link to other data sets (GIS, environmental, fisheries dependent/independent data) enabling more sophisticated modeling and multi-use.
- The project serves as a prototype for the FIN, thereby generating secondary benefits.
- The project is supported by matching partner funds, where applicable. **(FIN needs to discuss)**

FIN Social/Economic Work Group  
Meeting summary  
July 27, 1999  
Miami, Florida

The meeting was called to order at 9:10 a.m. and the following people were present:

Tony Lamberte, GMFMC, Tampa, FL  
Steve Holiman, NMFS, Tampa, FL  
Marina Guedes, ASMFC, Washington DC  
Dave Donaldson, GSMFC, Ocean Springs, MS

#### Purpose of the Meeting

D. Donaldson stated that the main purpose of the meeting was to review the current social and economic activities under FIN and develop a section for the FIN Quality Assurance/Quality Control (QA/QC) document regarding mail surveys. It was noted that as part of the review of activities, the group needed to be briefed on the pilot work that the Atlantic Coastal Cooperative Statistics Program (ACCSP) is undertaking regarding collection of social and economic data.

#### Review of Current activities

For the recreational sector, D. Donaldson reported that, through the Marine Recreational Fisheries Statistics Survey (MRFSS), state personnel are collecting social and economic data via an economic add-on. This add-on is part of NMFS initiative to periodically collect social and economic throughout the United States. Every three years, social and economic data are collected in the Southeast Region of the United States. For this period, the questionnaire consists of approximately 10 questions which are administered in the field. The last question asks if the person would be willing to participate in a follow-up telephone survey. The states are collecting the field data and the NMFS contractor is conducting the follow-up phone survey. Because this add-on survey asked more sensitive questions, the initial refusal rates appear to be higher than the last time an economic add-on was conducted in the Southeast. There was concern by the group that the FIN was not more involved in the development of the economic add-on for the MRFSS. It was understood that the funds for this activity were made available fairly quickly and there needed to be a fast turn around to implement this activity, but the group believed that there needs to be a more structured process for the pre-, during-, and post-survey activities. **It was recommended that the FIN, via the Social/Economic Work Group, become more involved in the development of social and economic data collection and management activities of the MRFSS.** There are two components involved: data collection (which has been established as every 3 years in the Southeast) as well as data analysis. The group discussed the perception of the utility of social and economic data. It was noted there is a perception that the data are not analyzed (and thus not used) on a regular basis. There is a need to develop a process for integrating the social and economic data into the management of the resources. Currently, these type of data are not regularly used in management decisions. There needs to be a systematic review of the social and economic data that are collected by the economic add-on similar to review of the catch and effort information collected by the base MRFSS. **It was recommended that when an economic add-on is being conducted in the Southeast, additional time be set aside at wave meetings to review the social and economic**

**data.** Participation at these meetings should be the FIN Social/Economic Work Group, data collection personnel, and MRFSS staff. It was pointed out that there may need to be separate meetings apart from the wave meetings but the group believed that holding these meeting in conjunction with the wave meetings was a good starting point.

The group reviewed data collection activities regarding the for-hire sector. D. Donaldson stated that social and economic data are currently being collected regarding charter boats, via the economic add-on. Information being collected from head boats will be evaluated during the South Carolina study and the group believed that it should wait for the results of this study before making any recommendations. It was noted that the activities for the charter and head boats collects data from the anglers and does not address the operational side of the for-hire sector. M. Guedes noted that there will be some information collected regarding the for-hire sector during the ACCSP pilot study regarding social and economic data. The group believed that it should await the outcome of that study as well before making any recommendations.

The group then discussed the commercial data collection activities. D. Donaldson stated that the trip ticket system is the backbone of the ComFIN. It allows for the identification of the universe of commercial fishery participants and from that, enables someone to design a sampling method for collecting other needed data such as social and economic data. Currently, Louisiana and Florida have operating trip ticket programs and Texas, Mississippi and Alabama are in the process of implementing systems in their state. There was a discussion regarding who would be collecting the information in the field. D. Donaldson noted that although the trip ticket system is the backbone of the ComFIN, it is equally important to continue to have a strong port sampler system. The port samplers will be responsible for collecting a variety of data in the field including the social and economic information. T. Lamberte suggested that it might be possible to have the dealers actually collect the social and economic data. The group agreed that it might be a long-term possibility, however, in the short-term, the information would probably be collected by the port agents. M. Guedes stated that the ACCSP will be conducting a commercial harvesters pilot study. The pilot study is designed to look at three specific areas. One is to identify and address potential problems with the mechanics of implementing the system. These include all data gathering, entry and storage activities as well as the ability to link the data to all other ACCSP data and to U.S. census data. The second is to carry out a field test of the survey instrument across the different cultural and socioeconomic contexts in which the data gathering system must eventually be implemented. Field testing questions and instruments is standard procedure in preparing for any survey research. The third area is to verify the economic models. Initial data gathering in two specific fisheries, summer flounder and blue crab, will be carried out and the data used for test runs of several standard economic models. The group decided that it would be beneficial to await the outcome of the ACCSP pilot study before proceeding with development of commercial data collection for social and economic data for FIN. The Social/Economic Work Group should be involved in the evaluation of the pilot study. There was a discussion regarding the need for both the ACCSP and FIN to use the same methods (mail survey vs. phone survey vs. personal interviews) for collecting social and economic data. M. Guedes stated that, in order to be compatible, both programs need to use the same methods since utilizing different methods can result in very different answers to similar questions. S. Holiman noted that as long as the same sampling protocol was being used and the same questions were asked, thus collecting the same data elements, the method of collection should not really matter. Although the data will not be identical, it will still be compatible. The group continued to discuss this issue and no consensus was reached. It was suggested that this issue be

discussed further by both the Social/Economic Work Group and the FIN Committee in the future. The next step after the evaluation of the pilot study would be to either conduct a similar pilot in the Gulf and Caribbean regions or implement the methods tested by the ACCSP study, depending on the outcome.

#### Development of QA/QC for Mail Survey

D. Donaldson stated that a draft section regarding mail survey has been developed and distributed to the group. D. Donaldson noted that editorial comments could be given to him or e-mailed to him as soon as possible. The group should focus on substantive changes. After some review, the group agreed that the section for mail surveys should be forwarded to the FIN Committee for their review and approval. The revised section is attached.

#### Other Business

S. Holiman brought up the issue of membership of the Work Group. When the Work Group was first established, the RecFIN(SE) Committee discussed adding people with more expertise in the social sciences and economics. However, since the RecFIN(SE) was not currently focusing on social and economic issues, it was decided to not alter the membership of the group. However, now that FIN appears to be working on social and economic issues, it might be an appropriate time to revisit the membership of the Work Group. After some discussion, **the group recommended that the FIN Committee readdress the membership of the Social/Economic Work Group. The group recommends that Ron Lukens, Lisa Kline, and Barbara Kojis be removed from the group and 2 - 4 people with social and economic expertise be placed on the group.** The people who will be selected for the Work Group will be determined by the FIN Committee at the upcoming fall meeting.

**There being no further business, the meeting was adjourned at 3:45 p.m.**

## **MAIL SURVEYS**

Mail surveys are a type of off-site survey method. The advantages of mail surveys over other approaches are mail surveys are relatively simple and cost-effective. These types of surveys are usually used to sample opinions about fishing issues and to develop sociological and economic profiles of anglers or of communities affected by fisheries. They can also be used as supplements to on-site creel surveys.

### **Survey Procedures**

Mail surveys can be applied as the initial point of survey contact using an existing sample frame or applied as a follow-up or add-on to a field intercept survey. License, permit or registration files can be used as the sample frame for mail surveys of the first type. These surveys are used most often for socioeconomic assessments to collect information that does not require the angler to recall detailed information on specific trips. When conducting surveys of this type, sampling is easier if the sample frame files are computerized, since selecting a simple random or stratified random sample is fairly straightforward. When the files are not computerized, sampling is usually conducted using a systematic random sampling since it is difficult to get simple random or stratified random samples of boxes of license cards.

Add-on mail surveys, as the name implies, are used to gather more detailed information than could be collected in the field. This approach requires the determination of an initial sampling protocol for selecting anglers in the field as well as a subsequent protocol for determining which intercepted anglers receive the add-on. While detailed trip-specific information, such as expenditures, is preferably gathered at the point of intercept, add-on mail surveys can be used to collect both trip related and general information from anglers if the time lapse between intercept and survey are not too great.

### **Design**

The structure of a typical mail survey consists of several mailings and a telephone follow-up of non-respondents. The multiple mailings typically cover introductions, reminders, thank-you messages, and rewards, as appropriate. One of the biggest concerns with mail surveys is the non-response. As with all survey methods, it is important to conduct mail surveys with professionalism, personalization, honesty, directness, and attention to detail. By doing this, the quality of response can be enhanced.

Before survey implementation, all forms should be pretested in the field. A survey agent should distribute the form to a number of "typical" respondents (i.e. not office mates). This will allow the agent to identify any problems the respondents have, and make changes to the reporting form accordingly.

## First Mailing

The first mailing should consist of a cover letter, a numbered questionnaire, and a postage-paid return envelope. Where deemed necessary or appropriate, an inducement to participate in the survey may also be included. All materials should be sent by first-class mail. It is important that the cover letter be written on official letterhead and personally signed by the leader of the survey team. The letter should provide an explanation of the survey's purpose as well as the importance of the respondent's participation in the survey. The content of the introductory letter will vary depending upon whether the survey is the first point of contact or whether it is a follow-up to the field interview. It should be established that all information will be kept confidential and explain that identification numbers are used only to check the respondent's name off the mailing list when the questionnaire is returned. The letter should also provide a telephone number respondents may call if they have questions. If a deadline for response is deemed appropriate, notification of such should also be included in the introductory letter. Any deadline, however, must be tactfully introduced, emphasizing the need for such, and allow reasonable time for the participants to respond.

As in any survey, questionnaire design is extremely important. The questionnaire should be straight forward and easy to use, and have a logical "hierarchical" layout from the standpoint of the respondents, not from an analytical viewpoint. The order and position of questions should not require a respondent to jump all over the form and flip pages. Questions of similar subjects should be grouped together. The print should be large enough to easily read, and there should be sufficient space for recording responses. The specific wording of questions should be considered carefully. Methodological studies have shown that even slight changes in wording, for example, "should" versus "could," drastically influence item response. All questions should have a clear and specific meaning, and redundant questions should be eliminated. Each questionnaire should have an identification number on the top of the first page. The questions should be brief and clearly stated. Open-end questions should be used sparingly, because they are hard to analyze and interpret when there is no opportunity for follow-up questions to clarify confusing answers. Finally, the questions should be as few as possible to satisfy the research needs while not excessively burdening the respondent.

The use of business reply envelopes with franked postage require less time to prepare and incur actual postage expense only when the envelopes are returned. However, stamped return envelopes imply a more personal approach and can provide for a slightly higher response.

All survey materials (cover letter, questionnaire, and return envelope) should be folded and stuffed together in the mailing envelope. Separate folding of materials suggests a less personal approach. When the respondent receives the envelope, the overall effect should be as pleasing as a personal business letter sent to an acquaintance. It is also important to send a postcard to everyone after the first mailing. The postcard should thank those who have already responded and reminds those who have not yet responded about the survey and the importance of their participation.

## Second Mailing

A second mailing to all non-respondents should be sent within a reasonable time after the initial

mailing or after passing of response deadlines. The same techniques should be used as with the first mailing. However, the use of a new personalized cover letter is very important. This letter should state that no response has been received to the first mailing and emphasize again the importance of the survey and the individuals participation. A new copy of the questionnaire and return envelope should be included because the original materials may have been thrown out or misplaced. A new response deadline, as appropriate, should be included.

### Third Mailing

A third mailing should be sent to all non-respondents several weeks after the second. The use of certified mail (despite costs) can be used since this mailing can significantly increase the overall response rate of the survey. The third mailing should utilize the same components of the previous mailings but should have yet another personalized cover letter.

### Telephone Follow-Up Survey

Usually, response rates of mail surveys are sufficient to obtain valid results. Sometimes, however, a concern about bias induced by the remaining non-respondents requires a follow-up survey by a different contact method. The follow-up interview usually will be by telephone rather than face-to-face. The purpose of the follow-up telephone survey is to both increase the response rate and allow for estimation of how the mail non-respondents differ from the mail respondents. If the mail survey had been a stratified random sample, a simple random sample of the non-respondents in each stratum should be contacted.

## **Non-response Bias**

Non-response in mail surveys may induce a non-response bias in the estimates. This occurs when the non-respondents differ in important characteristics from the respondents. The two groups may answer survey questions very differently, and wrong conclusions may be drawn if respondents are viewed as representative of the whole population. Non-response bias in mail surveys can be a major problem because non-response to mail surveys can be substantial.

### **Ways to Reduce Non-response**

There are several methods for reducing non-response in mail surveys. The first is to use Dillman's total design method. This method utilizes the multiple mailings, personal attention and other activities described previously in this section. By using this method, one is able to not only survey the avid participants (usually picked up in the first mailing) but also obtain information from the less serious participants (picked up in the second and third mailing).

Another way to reduce the non-response rate in a mail survey is use inducements or rewards for participating in the survey. This might be a monetary reward, a premium (such as a cap or t-shirt), or some kind of lottery for those who respond. It has been shown that monetary rewards are more effective than premiums or gifts. It has also been shown that the monetary reward does not have to



be significant to improve the response rate of the survey.

## **Summary**

The use of mail surveys will continue to be popular because of their relative low cost and simplicity of operation. Mail surveys allow agencies to usually conduct the work with their existing facilities and staff. Off-site surveys (telephone, door-to-door) are often complicated and may require specialized staff or contractors to conduct the survey. A well-designed mail survey can provide useful information about a situation and provide a cost-effective method for collecting the data.

### Status of 1999 FIN Activities

- Task 1:            Annual Operations Plan, 2000 (Goal 1, Objective 3) (F)
- Objective:        Develop 2000 Annual Operations Plan including identification of available resources, that implements the Framework Plan.
- Schedule:         Annual Operations Plan was distributed in August 1999 and will be discussed by the Committee at the fall 1999 FIN meeting.
- Task 2:            Development of a Program Design Document (Goal 1, Objective 1) (F)
- Objective:        Develop a program design document for FIN
- Schedule:         The Committee continuing working on this document as the different aspects of the program were developed. This issue will be discussed at the fall 1999 FIN meeting.
- Task 3:            Development of Funding Initiatives to Establish MRF Surveys (Goal 1, Objective 3) (R)
- Objective:        Support the establishment of long-term, comprehensive MRF surveys in Puerto Rico and the Virgin Islands.
- Schedule:         The Biological/Environmental Work Group met in April 1999 and developed recommendations regarding this issue. A report will be presented at the fall 1999 RecFIN(SE) meeting.
- Task 4:            Information Dissemination (Goal 1, Objective 4) (F)
- Objective:        Distribute program information to cooperators and interested parties.
- Schedule:         This task is an ongoing activity.
- Task 5:            Establishment of Educational Work Group (Goal 1, Objective 4) (F)
- Objective:        Establish an educational work group to develop and design an outreach program for FIN
- Schedule:         The FIN Committee discussed this issue and a letter was sent soliciting membership for the work group. The name of the group was changed to the Outreach Work Group. The Work Group will meet in fall 1999 to begin developing an outreach strategy. The group will also meet in conjunction with the ACCSP.
- Task 6:            Development of a Generic Trip Ticket Program (Goal 2, Objective 2) (C)
- Objective:        Develop a generic trip ticket program for the Southeast Region.
- Schedule:         The Data Collection Work Group met in August 1999 to discuss this issue and will present a report at the fall 1999 ComFIN meeting.
- Task 7:            Development of the Discards, Releases, and Protected Species Interactions Modules (Goal 2, Objective 2) (C)
- Objective:        Develop the discards, releases, and protected species interactions modules of the ComFIN.
- Schedule:         The Data Collection Work Group met in August 1999 to discuss this issue and will present a report at the fall 1999 ComFIN meeting.

- Task 8:            Development of the Social/Economic Module (Goal 2, Objective 2) (F)
- Objective:        Develop the social/economic module for the ComFIN.  
Schedule:        The Social/Economic Work Group met in July 1999 to address this issue and will present at report at the fall 1999 FIN meeting.
- Task 9:            Development of Data Collection Procedures Document (Goal 2, Obj 2) (C)
- Objective:        Develop a document which outlines the procedures for the collection of data under the ComFIN.  
Schedule:        The Data Collection Work Group met in August 1999 to discuss this issue and will present a report at the fall 1999 ComFIN meeting.
- Task 10:          Biological/Environmental Data Elements (Goal 2 , Objective 2) (F)
- Objective:        Compile metadata for inclusion into a metadata database for the Southeast Region.  
Schedule:        The Biological/Environmental Work Group met in April 1999 to discuss this issue and will present a report at the fall 1999 RecFIN(SE) meeting. The compilation of metadata is an ongoing activity.
- Task 11:          Commercial Quality Assurance and Quality Control (Goal 2, Objective 3) (C)
- Objective:        Identify and determine standards for commercial catch/effort data collection, including statistical, training, and quality assurance and quality control standards.  
Schedule:        The Data Collection Work Group met in August 1999 to discuss this issue and will present a report at the fall 1999 ComFIN meeting. The overall task of QA/QC is an ongoing activity.
- Task 12:          Development of Quality Assurance and Quality Control Methods (Goal 2, Obj 3) (F)
- Objective:        Identify and determine standards for commercial and recreational sociological and economic data collection, including statistical, training, and quality assurance and quality control standards.  
Schedule:        The Social/Economic Work Group met in July 1999 to develop a section regarding QA/QC for mail surveys. This information will be presented at the fall 1999 FIN meeting. The overall task of QA/QC is an ongoing activity.
- Task 13:          Annual Review Process of MRFSS Data (Goal 2, Objective 3) (R)
- Objective:        Implement an annual review process including guidelines for reviewing the data, through the RecFIN(SE), to evaluate MRFSS data.  
Schedule:        The data evaluation will be an ongoing task. The automated processes are being implemented.
- Task 14:          Port Samplers Workshops (Goal 2, Objective 3) (C)
- Objective:        Convene a workshop of state and federal port samplers to discuss commercial data collection activities  
Schedule:        The Gulf meeting was not held due to lack of funding for the federal biostatistical samplers. A meeting of Caribbean samplers is scheduled for October 1999. This issue will be discussed at the fall 1999 ComFIN meeting.
- Task 15:          Identification and Evaluation of Current Programs (Goal 2, Objective 4) (F)
- Objective:        Identify and evaluate the adequacy of current and future programs for meeting FIN standards.  
Schedule:        At the spring 1999, the Alabama representative provided a presentation to the Committee concerning the their inshore creel survey. This task is an ongoing activity.
- Task 16:          Combining Duplicative Data Collection and Management Activities (Goal 2, Objective 4) (F)

Objective: Identify and combine duplicative data collection and management efforts.  
Schedule: This is an ongoing task. The cost benefit analysis between the Mississippi Creel Survey and the MRFSS was not addressed in 1999.

Task 17: Determination of Catch and Effort for Non-Rod-and-Reel Fisheries (Goal 2, Objective 5) (R)

Objective: Determine catch and effort of shellfish and finfish harvested using non-rod-and-reel methods.  
Schedule: The Biological/Environmental Work Group met in April 1999 to address this issue. After some prioritization, it was decided that this task was not a high priority and will be addressed sometime in the future. A report will be presented at the fall 1999 RecFIN(SE) meeting.

Task 18: Determination of Catch and Effort from Private Access Sites (Goal 2, Objective 5) (R)

Objective: Determine catch rates and species composition from private access groups.  
Schedule: The Biological/Environmental Work Group met in April 1999 to address this issue. After some prioritization, it was decided that this task was not a high priority and will be addressed sometime in the future. A report will be presented at the fall 1999 RecFIN(SE) meeting.

Task 19: Determination of Catch Rates and Species Composition from Night Fishing (Goal 2, Objective 5) (R)

Objective: Determine catch rates and species composition from night fishing.  
Schedule: The Biological/Environmental Work Group met in April 1999 to address this issue. After some prioritization, it was decided that this task was a high priority and will be addressed in 2000. A report will be presented at the fall 1999 RecFIN(SE) meeting.

Task 20: Collection of Tournaments Data (Goal 2, Objective 5) (R)

Objective: Collect appropriate information from fishing tournaments, and integrate with other MRF data.  
Schedule: The Biological/Environmental Work Group met in April 1999 to address this issue. After some prioritization, it was decided that this task was a high priority and will be addressed in 2000. A report will be presented at the fall 1999 RecFIN(SE) meeting.

Task 21: Implementation of Methods to Monitor the For-Hire Fisheries (Goal 2, Objective 5) (R)

Objective: Identify evaluate, and test methodologies to survey charter and head boat fisheries.  
Schedule: This is multi-year task. The testing of the methodologies began in September 1997 and will be completed in December 1998. The evaluation of the methods is scheduled for September 1999.

Task 22: Coordination and Integration of Data Collection Efforts (Goal 2, Objective 5) (F)

Objective: Encourage coordination, integration, and augmentation, as appropriate, of data collection efforts to meet the FIN requirements.  
Schedule: This is an ongoing activity.

Task 23: Integration into the Stock Assessment Process (Goal 2, Objective 5) (F)

Objective: Develop a plan which outlines the needs for stock assessment for the upcoming year as well as tracking of the collection for these data.  
Schedule: Funding for the RFP is not available for 1999 and the FIN Committee needs to address this issue at the fall 1999 FIN meeting.

Task 24: Evaluation of Innovative Data Collection Technologies (Goal 2, Objective 6) (F)

Objective: To evaluate and recommend innovative data collection technologies.

Schedule: At the spring 1999 meeting, the Texas representative provided a presentation regarding the electronic data loggers currently being used for the data collection in their creel survey. This is an ongoing activity.

Task 25: Design, Implementation and Maintenance of Data Management System (Goal 3, Objective 3) (F)

Objective: To design, implement, and maintain an marine commercial and recreational fisheries data management system to accommodate fishery management/research and other needs (e.g., trade and tourism).

Schedule: The FIN Committee approved funding in 1999 for the development of a data management system prototype in Louisiana similar to the ACCSP system in Florida.

Task 26: Standards/Protocols/Documentation for Data Management (Goal 3, Objective 4) (F)

Objective: Develop standard protocols and documentation for data formats, input, editing, quality control, storage, access, transfer, dissemination, and application.

Schedule: The FIN Committee approved funding in 1999 for the development of a data management system prototype in Louisiana similar to the ACCSP system in Florida.

Task 27: Evaluation of Information Management Technologies (Goal 3, Objective 6) (F)

Objective: To evaluate and recommend innovative, cost-effective information management technologies.

Schedule: This is an ongoing activity.

Task 28: Long-term National Program Planning (Goal 4, Objective 1) (F)

Objective: Provide for long-term national program planning.

Schedule: This task is an ongoing activity.

Task 29: Coordination, Consistency and Comparability with Other Cooperative Marine Commercial and Recreational Fisheries Programs (Goal 4, Objective 2 and Objective 3) (F)

Objective: Coordinate FIN with other regional cooperative marine commercial and recreational fisheries programs and encourage consistency and comparability among regional programs over time.

Schedule: The FIN/ACCSP Compatibility Work Group met in May 1999 and will present a report at the fall 1999 FIN meeting. This task is an ongoing activity.

## ITEMS FOR FUNDING CONSIDERATION IN 2000

### Activities

Expand charter boat telephone survey for east coast of Florida

Completion of charter boat vessel frame for Texas

Conversion of Florida licensing system

Expand site register for night fishing activities in the Gulf

Continue administration and coordination of FIN

Continue development of FIN data management system

Continue recreational data collection in Gulf of Mexico

Continue development of trip ticket programs

Continue the support of commercial data collection activities

Continue the support of menhaden sampling

Continue the support of head boat sampling

Otolith workshops

Trip ticket vs. gulf shrimp landings comparison workshop

**COMMERCIAL FISHERIES INFORMATION NETWORK (ComFIN)  
MINUTES  
Thursday, September 23, 1999  
Tampa, Florida**

Chairman, Daniel Matos, called the meeting to order at 8:40 a.m. The following members, staff, and others were present:

**Members**

Kevin Anson, AMRD, Gulf Shores, AL  
Steve Brown, (proxy for J. O'Hop), FFWCC, St. Petersburg, FL  
Page Campbell, TPWD, Rockport, TX  
Guy Davenport, NMFS, Miami, FL  
Doug Frugé, USFWS, Ocean Springs, MS  
Christine Johnson, MDMR, Biloxi, MS  
Rick Leard, GMFMC, Tampa, FL  
Ron Lukens, GSMFC, Ocean Springs, MS  
Daniel Matos, PRDNER, Mayaguez, PR

**Staff**

Dave Donaldson, GSMFC, Ocean Springs, MS  
Madeleine Travis, GSMFC, Ocean Springs, MS

**Approval of Agenda**

The agenda was approved as amended.

**Approval of Minutes**

The minutes of the meeting held on April 8, 1999 in La Parguera, Puerto Rico were approved as amended.

**Review of List of Personnel with Access to Confidential Data**

G. Davenport distributed the list of personnel with access to confidential data and asked that Committee members verify the information on that list. Forms for new employees were available. D. Donaldson noted that the Marine Recreational Fisheries Statistics Survey (MRFSS) forms should be sent to D. Van Voorhees.

## Work Group Reports

Data Collection Work Group Report - Copies of the Data Collection Work Group Report were distributed to Committee members (Attachment A). D. Donaldson reported that the Data Collection Work Group met in Atlanta in August to discuss several issues. The first issue discussed was the comparison of the ComFIN and the Atlantic Coastal Cooperative Statistics Program (ACCSP) trip ticket programs. As a result of discussions at this meeting, some changes were made to the FIN trip ticket data elements which include, the addition of a trip number and market size range, and the removal of primary area fished and primary gear as separate data elements.

Donaldson reported that the Work Group then reviewed the draft QA/QC document for commercial data collection and made some revisions in the biological sampling and discards sections. The Work Group also suggested developing QA/QC sections for port sampler meetings, data management and validation methods.

The Committee then addressed the subject of standard codes. After reviewing the findings of the Data Collection Work Group, the Committee discussed several areas where the ACCSP and the FIN are not compatible, particularly the Area Codes since the grid system in the Gulf of Mexico does not cover the entire Gulf. Various possibilities were discussed by the Committee and it was agreed that it would be beneficial to present these findings to the GSMFC Commercial Fisheries Advisory Panel at their meeting in October and request their input. If recommendations are made by the Advisory Panel, then the ACCSP Standard Codes Committee would be asked to revisit this issue since some codes do not correspond. The Committee continued to discuss Standard Codes particularly the problems associated with Market Category and agreed to have D. Donaldson contact M. Cahall of the ACCSP in an effort to reconcile the differences in FIN and ACCSP codes.

D. Donaldson reported that the Data Collection Work Group then discussed the Biological Sampling Module. The Work Group recommended that the FIN use millimeters as the official measurement for length, and that fork length or mid-line length should be used as the official length measurement. After Committee discussion, **D. Frugé moved to adopt both of these recommendations. The motion was seconded and passed unanimously.**

D. Donaldson reported that the Fishery module was the next item addressed by the Data Collection Work Group and it was noted that all the minimum data elements for the Fishery module



are captured in the trip ticket program. The Work Group also discussed discards and protected species modules and agreed that the ComFIN should complete the trip ticket, biological sampling and social/economic modules before developing another module. Following discussion on species codes and adoption of the ITIS codes, **R. Leard moved to accept the Data Collection Work Group Report. The motion seconded and passed unanimously.**

**Implementation Work Group Report** - Copies of the FIN Implementation Work Group Report, the ComFIN Implementation Report, and the funding decision process for FIN were distributed to Committee members (Attachment B). D. Donaldson reported that the Gulf states, the GSMFC, and the NMFS met in July in New Orleans to discuss implementing the ComFIN trip ticket program. As a result of this meeting, the Implementation Work Group met in Atlanta in August having been charged with developing a ComFIN Implementation Report. The Work Group reviewed a summary of the meeting held in New Orleans and this report was used as the basis for development of the Implementation Report. Donaldson reported that the Work Group believed that information on the commercial sampling programs in the U.S. Virgin Islands and Puerto Rico should be added to the report. **P. Campbell moved to accept the FIN Implementation Work Group Report. The motion was seconded and passed unanimously.**

### **Discussion of Port Samplers Meetings**

D. Donaldson stated that a port samplers meeting was held in 1998 which included port samplers from Florida, Alabama, Mississippi, North Carolina and South Carolina. In 1999 the port samplers were unable to meet because of travel fund constraints for federal agents, however Donaldson stated that he is hopeful that these meetings will resume in the future. Donaldson reported that at the recent Implementation Work Group meeting he met with T. Tobias and D. Matos to discuss holding a meeting of Caribbean port samplers. It was agreed that it would be beneficial to have a joint meeting of the port samplers from the U.S. Virgin Islands and Puerto Rico. A meeting has been scheduled for October 7 and 8 in St. Croix, U.S.V.I. Donaldson noted that the agenda for this meeting will include a presentation on the ComFIN program, an overview of the Cooperative Statistics Program by G. Davenport, how some of the data collected in the Caribbean have been used, review of sampling methods used in the U.S.V.I. and Puerto Rico, and discussion

among the port samplers. T. Tobias has arranged a trip to a fisherman's dock to work up a sample, and also reef fish identification.

Donaldson reported that there is funding in 2000 for both Gulf and Caribbean port sampler meetings and they will continue as long as there is interest. Donaldson noted that since it is difficult to have one port samplers meeting in the Gulf, there will probably be a meeting of port samplers from Texas and Louisiana, and another with Mississippi, Alabama, and Florida. Possible locations for these two meetings are Galveston and Tampa.

**There being no further business, the meeting was adjourned at 11:00 am.**

Data Collection Work Group  
Meeting Summary  
August 17-18, 1999  
Atlanta, Georgia

The meeting was called to order at 9:00 a.m. and the following people were present:

Guy Davenport, NMFS, Miami, FL  
Trish Murphey, NCDMR, Morehead City, NC  
Joe Shepard, LDWF, Baton Rouge, LA  
Page Campbell, TPWD, Rockport, TX  
Geoff White, ASMFC, Washington, DC  
Kevin Anson, AMRD, Gulf Shores, AL  
Toby Tobias, USVIDFW, St. Croix, VI  
Mark Alexander, CBMF, Old Lyme, CT  
Dave Donaldson, GSMFC, Ocean Springs, MS

Purpose of the Meeting

D. Donaldson stated that the main purpose of the meeting was to review the differences between the ComFIN and ACCSP trip ticket programs; development of a QA/QC document for commercial data collection; development of standard codes for FIN; further development of the biological sampling program; and discussion about the fishery and discards modules under ComFIN.

Comparison of ComFIN and ACCSP Trip Ticket Programs

D. Donaldson noted that at the last FIN/ACCSP Compatibility Work Group meeting, the group began discussing the trip ticket systems for each program. During the discussions, several differences were identified. The group believed that the Data Collection Work Group should address these differences. Therefore, the Data Collection Work Group discussed the identified issues. The revised FIN trip ticket data elements are attached. The first issue was the absence of TRIP NUMBER in the FIN trip ticket program. This element is necessary for compatibility with the ACCSP program and it was inferred for the FIN program since trip number will be one (1) for the majority of the trips in the Gulf of Mexico. To ensure compatibility, however, the group decided to add the element. Another issue was the addition of MARKET SIZE RANGE in the FIN program. This element was added to capture the actual count, pounds, etc. of the product instead of relying on categories that may vary among and between states. The actual number will allow users to view the actual measurement used by the dealers. The use of this element as well as the coding of the MARKET CATEGORY will be discussed later in this report. The group also decided to remove PRIMARY AREA FISHED and PRIMARY GEAR as separate data elements and provide descriptions in the AREA FISHED and GEAR(S) elements to explain when only primary area fished and/or gear was used.

Development of QA/QC Document for Commercial Data Collection

D. Donaldson distributed a draft QA/QC document developed by J. Shepard for commercial data collection. The group reviewed the document and the revised document is attached and represents the administrative record for this portion of the meeting. It was noted that there needs to

be some language regarding the periodic port sampler meeting as part of QA/QC. D. Donaldson will develop this section and provide it with the report. The group needs to develop QA/QC sections for data management and validation methods. G. Davenport noted that there may be some information already written regarding data management. He will check with J. Poffenberger and get back with D. Donaldson with any pertinent information. D. Donaldson will develop a section for validation methods for inclusion in the document. The group noted that this information will be included in ComFIN Data Collection Procedures Document.

#### Development of Standard Codes

D. Donaldson stated that the FIN needs to develop codes for the various data elements being collected for the commercial fisheries data. In an effort to be compatible with the ACCSP, the group utilized the codes already developed by ACCSP. Since both programs will be part of the FIS, it is important that both programs use similar codes to avoid confusion. The group discussed each data element for the trip ticket and biological sampling modules in terms of variable format and necessary codes. These comments will be presented to the ACCSP Standard Codes Committee at their upcoming meeting. The following are comments and suggestions developed by the group. A list of revised codes is attached.

#### **Table A.1, Standard Code Formats** **Table 1, Minimum Data Element Table**

In alphanumeric fields where there may be imbedded numbers (e.g. *reporting form series number*) should the numbers be right justified and zero filled. For example, CT00000001 vs CT1. Does this have any data management implications besides sort order. Same applies to the ITIS codes used for *Species*. Since the *Species* code is presently an "11 digit character code", would one use 87470101 for Alewife, or 00087470101?

*Reporting Form Series Number* - Does the value entered here have to be unique within *Form Type / Version*, within State, or globally across all partners? What are the data management implications?

*Vessel Identifier* - Is this supposed to be State Reg / USCG Doc or HIN? The field width suggests that VIN would be used.

*Date of Landing* (Table A.1) - The group recommends using FIPS state code rather than 2 character postal abbreviation. This would be uniform with *County/Port*.

State postal code seems to be a redundant component in many of the data elements (*Form Type / Version*, *Reporting Form Series Number* (?), and *Dealer ID*). Is this necessary?

#### **Table A.3 Units of Measurement**

Why is there a code for *meat pounds* (MP)? Shouldn't this be indicated by Landing Grade code 70 (*meats*) or perhaps other codes such as 40-44 in table A.7?

### **Table A.3 Length Types**

For biological sampling, at-sea observer and protected species interactions the following length types need to be added:

- LT - Lip thickness (for conch, VI)
- SG - Shell length (for conch, VI)
- SH - Shell thickness (clams, NC)
- CC - Curved carapace width (turtles)
- CU - Curved carapace length (turtles)

For biological sampling, it was generally agreed that all lengths would be reported in mm and all length measurements should be standardized to fork length (or midline length) for finfish.

### **Table A.3 Dealer Identification**

Louisiana needs 7 digits for dealer code. Must all partners use the format template provided (ST12345AWD), or can all of the characters following the state code be utilized as a partner sees fit? *Note: Mark Alexander seemed to recall that the ACCSP Commercial Tech Committee later decided that all locations of a dealer would (or could) be separately licensed and that the WD / RD portion of the dealer number was only a Florida requirement. If this is the case, might the rightmost 8 characters of the dealer number be entirely up to the discretion of the partner?*

### **Table A.3 Area Code Format**

The *nnn.nnn* format for area codes will need to be modified for the Gulf of Mexico. Louisiana uses 4-digit hydrologic water body codes for their inshore areas. The area fished code would be based on latitude and longitude and would allow for as much detail as was needed. This idea will be presented to the ACCSP Standard Codes Committee

### **Table A.4, Gear Types and Codes Commercial Program Design, Table 2**

Table 2 will have to be expanded to include the values for *Quantity, Fishing Time, and Number of Sets* for the major gear groups listed in table A.4. The Group members will supply Dave Donaldson with Code table additions and effort descriptors (for Table 2) by September 13, 1999.

The TIP program may use  $yd^2$  for *Quantity of Gear* rather than float line length. This will be confirmed.

For gears with long deployment times (i.e. long lines), when does fishing time start and end? For example: Is it the time interval from first hook in to last hook out?

Under *Traps and Pots* in Table 2, the Group suggested that *Mean Soak Time* would be a better descriptor for Fishing Time than *Total Soak Time*.

For the code 701 - *Troll & Hand Lines CMB*, what is “CMB”?

Is the code 804 - *Chemical* targeted at the aquarium trade?

Under other, add *Slurp Gun* and/or *Slurp Gun, Diving*.

What is 151 - *Pots and traps, puffer*?

The 750 series codes for *By Hand* do not seem to follow the same hierarchical format as other gears. The Group suggests:

- 750 By Hand
- 751 By Hand, no diving gear
- 752 By Hand, diving gear

#### **Table A.5, Disposition Codes**

The descriptions of the codes need to be clarified with more detail. For example, *Placed in car* might be expanded to read *Placed in live car or pound* and *Removed for sale* might read *Removed from car or pound for sale*. Code 229 - *No retention* was vague and confused with 204 - *No quota in area*.

There seems to be no clear indication in the codes 001 - 010 to suggest whether the product was sold or retained for personal use. *Was this supposed to be implicit by the appearance of dealer information?*

Need a code for unknown disposition.

#### **Table A.6, Market Categories (Size)**

The Group wondered if the codes CX through MX were specific to lobster, or could they also be applied to any other species (finfish, crabs, etc). If they can, the descriptions should convey this fact. Also, the specific application of these codes should be detailed in the metadata.

The Group also proposed that #1, #2, and #3 blue crabs would use the LG, MD, and SM size category codes respectively.

The Group also suggested a size category of NG (no grade) for an “unclassified category”.

The Group commented that the size category codes 01-91 are not universally applicable to all fisheries where market size is specified as a range in size. Even count range intervals used for a given species may change seasonally or with size itself. For example, large shrimp may use an interval of 10 (20-30 / lb) while small shrimp may use an interval 20 (80-100 / lb). The field size does not permit the permutations that would be required to satisfy every fishery. To solve this problem, the workgroup proposed adding a data element pair: *Size Range Minimum and Maximum*.

These data elements would be used for any species where a market size category is expressed in terms of a range of sizes. To flag the use of this field pair, and to specify the units used, special Market Size Categories would be instituted as follows:

CT - counts per lb. (i.e. 80-100 / lb)

LB - pounds (i.e. 1-2 lbs, 2-3 lbs)

MM - millimeters

Using this method, the scallop size codes (S0-S6) could also be eliminated.

#### **Table A.7 Market Grade (Landing Condition)**

Is code 20 (*Scales*) a typo intended to be *Scaled*? If not, a code for *Scaled* should be added.

#### **Table A.8 Species Codes**

Adoption of the ITIS codes would be no problem.

#### **Table A.9 State and County Codes**

Can FIPS be used for port codes?

**The meeting was recessed at 4:30 p.m.**

**August 18, 1999**

**The meeting reconvened at 9:00 a.m.**

#### Discussion of Biological Sampling Module

D. Donaldson distributed existing biological sampling module data elements. The group reviewed the elements and developed variable formats and coded, where necessary. The group discussed the LENGTH element. **It was recommended by the group that FIN used millimeters as the official measurement for length.** The LENGTH TYPE was also discussed by the group. G. Davenport noted that at last year's Gulf of Mexico port samplers meeting, a recommendation regarding length type was developed. **It stated that fork length or mid-line length should be used as the official length type measurement for FIN.** The group believed this recommendation should be discussed by the FIN Committee at the upcoming meeting. The revised biological sampling module elements are attached and represent the administrative record for this portion of the meeting.

#### Discussion of Fishery and Discards Modules

The group discussed the Fishery module and stated that all the elements necessary are included in the trip ticket elements. The method for sampling and collecting this information will be developed once the trip ticket programs have been implemented in the Gulf of Mexico. The group also discussed the development of discards and protected species interactions modules. The

group agreed that these modules are currently lower priority than the trip ticket, biological sampling, and social/economic modules. The group believed ComFIN should focus on completing these modules before becoming involved in developing another module.

**There being no further business, the meeting was adjourned at 10:15 a.m.**



Table 1. Minimum data elements for the ComFIN trip ticket program (T = information collected on a trip ticket, B = information collected on trip ticket or via survey ).

DATA ELEMENT	DESCRIPTION	Collection method
Trip date	The date (mm/dd/yyyy) that the trip started. A trip is defined as the time the vessel left the dock to the point that the product was transferred	T
Trip number	Sequential number representing the number of a trip taken in a single day by either a vessel or individual. The trip number will default to one (1) when only a single trip is conducted	T
Form type/version #	Version identification number for the ComFIN trip ticket. Criteria will be developed to determine when a new version of the form will be identified	T
Form/Trip ticket number	Unique identifier for a specific trip. This will be printed on the actual trip ticket form. The numbers will be consecutive.	T
Vessel ID	Coast Guard or state registration number (will be linked to unique vessel identifier. These identifiers must be trackable through time and space.)	T
Participant ID	Fisherman license# (will be linked to unique participant identifier [SSN, fed tax id#, etc.]. These identifiers must be trackable through time and space)	T
Species	Code for the species of fish caught. Each species is to be identified separately. Use of market or generalized categories should be avoided within species code fields or variables. (ITIS codes)	T
Quantity	The amount of each marine species that is transferred and/or sold.	T
Landing condition (Grade)	Code for condition landed (whole, gutted, headed, etc.). See appendix xx (to be adopted/developed)	T
Quantity units	Code for the units used for measuring landings (pounds, kilograms, etc.). See appendix xx (to be adopted/developed)	T
Market size range	Actual size range of species landed by market category	T
Ex-vessel value or Ex-vessel price	The total dollar value for each species that is landed or sold by market category The price per unit weight paid for each species that is landed or sold by market category	T
County (minimum) or port (optional) landed	Code that will provide the location within a state where the product was transferred. See appendix xx (to be adopted/developed).	T
State landed	Code that will identify the state where the product was landed or unloaded. See appendix xx (to be adopted/developed)	T
Dealer ID	This element is an identifier for the dealer at the point of each transaction. In the case of multiple dealers, the landings would be reported separately for each dealer.	T
Unloading date	Date (mm/dd/yyyy) the landed species was transferred to a dealer.	T
Market category	Code that will specify any market or grade categories that affect price, usually size related.	T
Gear(s)	Code(s) which identify(s) all the gears used to catch the landed species. If detailed effort is not collected via the trip ticket, this field will contain a code which describes the primary type of gear used to catch the landed species	T
Area fished	Code that provides all locations where fishing occurred, using NMFS/state water body codes. If detailed effort is not collected via the trip ticket, this field will contain a code which provides a general location where the fishing occurred, using NMFS/state water body codes. The distance from shore where fishing occurred [inshore, inland (0-3 mi or 0-9 mi depending on state), EEZ (3-200 mi or 9-200 mi depending on state), >200 mi.	T

Disposition	Code which describes the fate of the catch (i.e. discards, bait, personal consumption, etc). Disposition of discards should be recorded (i.e. regulatory vs. other discards, dead or alive, etc.)	B
Quantity of gear	The amount of gear employed	B
Days at sea	Days from the start of the trip to the return to the dock (dd:hh)	B
Number of crew	Number of crew on each trip, including captain.	B
Fishing time	Total amount of time (hrs) that gear was in the water and/or amount of search time for each trip (based on gear used - See Table 2)	B
Number of sets	Total number of sets or tows of gear during a trip	B

Table 2. Standard measurements of quantity of gear, fishing time, and number of sets for specific gear types.

<b>TYPE OF GEAR</b>	<b>QUANTITY</b>	<b>FISHING TIME</b>	<b>NUMBER OF SETS</b>
Traps and Pots	Number traps pulled	Mean soak time	
Trawls	Number towed	Total tow time	Number of tows
Gill Nets Entanglement	Float line length for string	Soak time	Number of string (net) hauls
Longlines	Number gangions/hooks	Soak time	Number of hauls
Dredges	Number pulled	Total tow time	Number of tows
Nets	Number of pieces of apparatus		
Rod and Reel	Number of lines (Number of hooks is secondary)	Soak time	
Purse Seines	Length of floatline	Search time	Number of sets
Hand Gear	Number of lines (Number of hooks is secondary)	Soak time	
Harpoons	Number	Search time	Number of harpoons

# DRAFT

## Port Sampler Quality Assurance Procedures

### **Biological Sampling/Discards**

New Port Samplers will be initially trained in fish identification and sampling techniques. Samplers will be tested on a minimum of 20 fish that are predominant in the commercial fishery in their State. Fish should be identifiable to species level and correct NODC codes identified for each species. Samplers will be re-tested every six months to ensure proper identification of fish. Each new port sampler will be accompanied on his first assignment by a supervisor to insure that proper procedures are utilized for sampling and identification of fish. If the supervisor deems it necessary, he/she will accompany the port sampler on subsequent assignments until the supervisor is sure the sampler is performing efficiently. Supervisors will review 100% of data collected from the first three solo assignments of a new port sampler for accuracy, completeness and compliance with standard operating procedures. After the first three solo assignments, supervisors will review data from one assignment every three months for accuracy.

For each 6 months of active sampling, a port sampler will have a quality assurance/quality control (QA/QC) visit from a supervisor. The supervisor will check that the sampler has all standard equipment, forms and procedures manual. The supervisor will administer a written questionnaire on standard sampling procedures to the port sampler. The supervisor will also observe the port sampler conducting an assignment. The supervisor will fill out a rating form grading the sampler on his/her ability to properly identify and subset a sample, record weight and length information, record trip information and properly code all information obtained during the assignment. If the port sampler is found to be deficient in one or more areas, the supervisor may recommend partial or complete re-training of the sampler. Periodic meetings of port samplers is also part of QA/QC for ComFIN. The meetings allow for interaction among the samplers and provides them a forum to discuss data collection methods, problems encountered in the field and potential solutions, and other related issues.

### **Validation Methods**

As part of the QA/QC procedures for FIN, it is essential that some type of validation be conducted to verify the accuracy of commercial catch and effort information collected under the ComFIN.

One of the validation methods is the use of fishery-dependent surveys. A multiple faceted approach will be used which include port sampling programs; at-sea observer programs; increased law enforcement presence such as overflights, boarding and summons reports, vessel tracking system, audits and inspections violations hotlines customs data, and consistency of penalties between states; and distribution of periodic data summaries to fishermen for self-verification. The presence at the docks or on vessels is the best method of verification and should be given highest priority. The periodic distribution of standard data summaries to fishermen and dealers will be provided through the FIN data management system. Another method is the use of audits and inspections of records either on-site or at an agency of records kept by fishermen and dealers of productions, purchases, and sales of fishery products in comparison to those data actually submitted to and received by the reporting agency. This can be accomplished via record content, submission frequency, and retention

period specified by federal and/or state statutes or other regulations; statistically valid random selection of a portion of the fishermen and/or dealers involved in fisheries or a particular stratum of a fishery to assess compliance rates with reporting rules and accuracy of reporting data; scope of audits may require additional information to that reported in order to verify accuracy of reported data; and auditors must be granted official access to these additional sources of information as needed to perform such audits. This method should be used only on an as-needed basis. Other methods that could be used include random additional logbooks; independent reports from fishermen and dealers of certain data elements; fishermen permit qualification; quota monitoring activities; or any combination of the above. These methods should be used only on an as-needed basis.

Standard data elements of FIN biological sampling module.

DATA ELEMENT	DESCRIPTION	FORMAT
Trip Ticket Number	Trip Ticket Number If Available	see Table A.1
Record Number	Annual Sequential Interview Number by port sampler	3 digit numeric
Record Type	Random or Bioprofile (length frequency vs. hard parts)	2 digit numeric
Sample Date	Month / Day / Year	see Table A.1
Sampler	Port Agent Code	4 digit numeric
State (Landing)	State Code (FIPS)	see Table A.1
County (Landing)	County Code (FIPS)	see Table A.1
Sampling Location	Dealer Number	see Table A.1
Gear Code	Gear Code	see Table A.1
Area Fished	Area Code	see Table A.1
Species Code	ITIS species Code	see Table A.8
Landing Condition	Condition Landed (Whole, Guttled, Headed, Etc.)	see Table A.7
Market Size Range	Actual Size Range	
Market Category	Code that will specify any market or grade categories that affect price, usually size related.	see Table A.6
State (Sampled)	State Code (FIPS)	see Table A.1
County (Sampled)	County Code (FIPS)	see Table A.1
Number Measured	Number of Fish Measured	3 digit numeric
Length	Length of Individual Fish (in millimeters)	4 digit numeric
Length Type	Total Length, Standard Length, etc.	2 digit alphanumeric
Weight	Weight of Individual Fish	4 digit numeric
Weight Units	(Pounds, Kilograms, Etc.)	2 digit alphanumeric
Sex	Sex Code	2 digit alphanumeric
Sex Stage	Stage of Reproduction	2 digit alpha number
Age Tag Number	Annual Age Structure Identifier, sequential # by species	4 digit numeric

FIN Implementation Work Group  
Meeting Summary  
August 16, 1999  
Atlanta, Georgia

The meeting was called to order at 9:10 a.m. and the following people were present:

Guy Davenport, NMFS, Miami, FL  
Page Campbell, TPWD, Rockport, TX  
Toby Tobias, USVIDFW, St. Croix, VI  
Maury Osborn, NMFS, Silver Spring, MD  
Daniel Matos, PRDNER, Mayaguez, PR  
Dave Donaldson, GSMFC, Ocean Springs, MS

Purpose of the Meeting

D. Donaldson stated that the main purpose of the meeting was to review the products developed from the ComFIN implementation meetings and develop a report from the materials as well as develop a funding decision process, review and evaluation criteria, guidelines and implementation strategy for FIN.

Development of a ComFIN Implementation Report

D. Donaldson stated that the Gulf states, GSMFC, and NMFS met in July in New Orleans to discuss implementing ComFIN. One of the tasks for this group is to develop a report regarding the implementation of ComFIN. A meeting summary of the implementation meetings was provided to the work group and it was suggested that some introductory language be added and the bulleted items from the summary be incorporated into the report. The group discussed adding some information about the U.S. Virgin Islands and Puerto Rico regarding their commercial sampling programs. The group reviewed the meeting summary and made several changes. The draft implementation report is attached and represents the administrative record for this portion of the meeting.

Development of Funding Decision Process

D. Donaldson stated that the FIN discussed the need for a funding decision process, similar to the one developed by ACCSP. In the past, there have not been funds available for operational activities however with the creation of the GulfFIN line item, there needs to be a process for determining how the funds will be spent among the partners. M. Osborn and G. Davenport stated that they are concerned that the funds appropriated under the GulfFIN line item are not available to the federal partners of the program. D. Donaldson stated that the language associated with the line item clearly stated that the GulfFIN funds are to be used by the Gulf states only. M. Osborn noted that is one interpretation of the language and there are differing views about how the money can be spent. M. Osborn felt that NMFS is being left out of the loop and not being treated as a full partner. After some discussion, the group decided that this work group was not the appropriate body to determine how the money should be spent and **recommended to the FIN that the GSMFC State/Federal Fisheries Management Committee (S/FFMC) address the issue of how the GulfFIN line item should be allocated: to state partners only or both state and federal**

**partners, at their upcoming meeting in October.** D. Donaldson noted that the FIN Administrative Subcommittee discussed the possibility of reducing the number of FIN Committee meetings from twice a year to once a year. M. Osborn stated that there needs to be a list of funding priorities developed before the annual FIN meeting. This funding priority list will be developed at the subcommittee/work group level. The recreational (Biological/Environmental), commercial (Data Collection) and social/economic (Social/Economic) components will be charged with developing funding priorities for the upcoming year. It was noted that a clear charge to each of these groups needs to be developed so useful products are produced. Budgetary and technical reviews need to be incorporated into the process. It is important that realistic budgets be developed to ensure the funding is used in the most efficient manner. The technical review of the proposed activities will be part of subcommittee/work group charges. The activities will be reviewed prior to implementation of the tasks. Once the groups have presented their recommendations, the FIN Committee will review and consider which activities to fund for the upcoming year. Once the FIN Committee agrees upon the activities, the list needs to be approved by the appropriate bodies in the Gulf of Mexico and Caribbean. For the Gulf of Mexico, the S/FFMC will provide final approval and in the Caribbean, it will be the Caribbean Fishery Management Council.

#### Development of Guidelines and Review and Evaluation Criteria

The group developed guidelines and review and evaluation criteria to be used by the appropriate subcommittees/work groups. The group utilized the ACCSP process as a starting point. The FIN funding decision process is attached and represents the administrative record for this portion of the meeting.

#### Discussion of FIN Implementation Strategy

D. Donaldson noted that there may not be a need for an implementation strategy for FIN. On the recreational side, the program is basically implemented. In the states of Louisiana through Florida, state personnel are conducting the MRFSS. In Texas, there is a need to make their data available and ensure that they are compatible. This is a task that the RecFIN(SE) Committee is addressing. With the availability of funds for the Caribbean, the MRFSS methodology will be implemented in that region as well. On the commercial side, the Gulf states are working on implementing trip ticket programs. This is the first step in implementing a cooperative data collection program. Once the trip tickets are in place, information about detailed effort, biological sampling, social/economic data, and discards can be collected. M. Osborn stated that there may be a need to begin collecting social and economic information before full implementation of the trip ticket system. D. Donaldson noted that you need the trip ticket system in place before you can collect the social and economic data since the trip ticket program identifies the universe from which you will be sampling. Although it has never been formally stated, collection of the catch and effort data is the highest priority to the FIN. M. Osborn stated that she understood that but there is a real need for social and economic data and these types of data might be as high a priority as catch and effort and the group should consider the collection of social and economic data at the same level as catch and effort.

#### Other Business

M. Osborn stated that funds are available to begin recreational data collection in the Caribbean. The MRFSS methods will be used and NMFS will work with Puerto Rico and U.S.

Virgin Islands to coordinate the data collection activities. Sampling will begin in Wave 6 of this year and continue for three waves.

**There being no further business, the meeting was adjourned at 3:45 p.m.**



## ComFIN Implementation Report

The Commercial Fisheries Information Network (ComFIN) and the Southeast Recreational Fisheries Information Network [RecFIN(SE)] are state-federal cooperative programs to collect, manage, and disseminate statistical data and information on the marine commercial and recreational fisheries of the Southeast Region.

The need for a comprehensive and cooperative data collection program has never been greater because of the magnitude of the recreational fisheries and the differing roles and responsibilities of the agencies involved. Many southeastern stocks targeted by anglers are now depleted, due primarily to excessive harvest, habitat loss, and degradation. The information needs of today's management regimes require data which are statistically sound, long-term in scope, timely, and comprehensive. A cooperative partnership between state and federal agencies is the most appropriate mechanism to accomplish these goals.

The scope of the ComFIN and RecFIN(SE) includes the Region's commercial and recreational fisheries for marine, estuarine, and anadromous species, including shellfish. Constituencies served by the program are state and federal agencies responsible for management of fisheries in the Region. Direct benefits will also accrue to federal fishery management councils, the interstate marine fisheries commissions, the National Park Service, the U.S. Fish and Wildlife Service, and the NOAA National Marine Sanctuaries Program. Benefits which accrue to management of fisheries will benefit not only commercial and recreational fishermen and the associated fishing industries, but the resources, the states, and the nation.

The mission of the ComFIN and RecFIN(SE) is to cooperatively collect, manage, and disseminate marine commercial, anadromous, and recreational fisheries data and information for the conservation and management of fishery resources in the Region and to support the development of an national program. The four goals of the ComFIN and RecFIN(SE) include to plan, manage, and evaluate commercial and recreational fishery data collection activities; to implement a marine commercial and recreational fishery data collection program; to establish and maintain a commercial and recreational fishery data management system; and to support the establishment of a national program.

Several meetings were held in July 1999 to get all the players involved in commercial data collection activities in the Gulf of Mexico at the table and discuss who will be responsible for the various tasks involved in the collection and management of these data. From those meetings, the following items were identified:

- It was stated that the trip ticket program is the backbone to the ComFIN. The first step in implementation of the ComFIN is the initiation of trip ticket programs in each state in the Gulf of Mexico. It is essential that each state have a trip ticket program to ensure that all landings are captured.
- It was suggested that some side-by-side activity between the current data collection (monthly landings) and the trip ticket be conducted for a specified time period. When Florida implemented their trip ticket program, they conducted side-by-side

comparisons for two years to ensure that the data being collected by the two programs were the same.

- It was stressed that the port agent system is very important and still plays an integral role in ComFIN. Although the landings information will be captured via the trip ticket, the port samplers will still be necessary to collect such information as detailed effort (where not captured on the trip ticket), biological sampling, social/economic data, and discards information. In Texas and Mississippi, there is a need for additional port samplers to conduct the necessary data collection activities. There was a stated need for increased biological sampling in Texas. This issue will be addressed during the development of the FY2000 cooperative agreement for FIN.
- The Gulf States Marine Fisheries Commission (GSMFC) will be the data warehouse for the Gulf of Mexico. It was also suggested that the GSMFC act as a centralized repository for all the dealers contact information similar to the charter boat vessel frame. The GSMFC would be responsible for maintaining the data base and the states would be responsible for providing updates to the dealer information. The group discussed the data management aspects of the ComFIN and the fact that this system will be housed at the GSMFC. The issue of how this will affect the NMFS-Miami data management facility was discussed, and it was pointed out that although the ComFIN data management system will house the regional data, there is still a need for NMFS data management capabilities. However, it was noted that by establishing a regional data warehouse at the GSMFC, there will be some freeing up of NMFS staff to focus on other aspects of the program. It was also noted that a process for transferring ComFIN data into the Fisheries Information System (FIS) still needs to be developed.
- Since several of the states are beginning the implementation of trip ticket programs and Louisiana and Florida already have operational program, it was discussed and decided that there needs to be a workshop regarding establishing and maintaining a trip ticket program. The workshop will focus on the steps Florida and Louisiana took to implement their programs, problems and issues encountered, pros and cons about the way their systems are set up, costs of operation, etc. This workshop will be held during the Annual Fall GSMFC meeting at the Data Management Subcommittee meeting.
- The group discussed the issue of quota monitoring. It was decided that this issue needs to be further explored by the FIN Committee at their upcoming fall meeting. The partners need to develop a list of species that are currently monitored by quota. Alabama stated that they currently do not quota monitor any species. Mississippi stated that they have a quota for red drum and speckled trout. Also, the Committee needs to discuss what the expectation of a FIN quota monitoring system would be: estimation of fish or total count of fish.
- The issue of continued funding for commercial activities in the Southeast Region was

discussed. There was concern that because of the initiation of trip ticket programs in the Gulf of Mexico, there might be the perception that the current funding for the Cooperative Statistics Program (CSP) could be utilized for other activities, possibly outside of the Region. It was pointed out that this is not the case and there is still the need for funding. Although the funds may not be used for current CSP activities, the money is essential to the collection of commercial data. It was also noted that a significant amount of funding for the U.S. Virgin Islands (100%) and Puerto Rico (65%) comes from the CSP and without these funds, the sampling in the Caribbean would be drastically reduced. It was decided that a schematic be developed (and incorporated into the State/Federal Fisheries Management Committee presentation) that outlines the amount of funds needs for all the commercial data collection activities in the Southeast. This could be used as rationale for keeping funding in the Southeast for commercial data collection (i.e. detailed effort, biological sampling, social/economic, discards).

- The group discussed the need for periodic meetings of the port samplers. Last year, there was a port sampler meeting in Tampa which was very successful. Unfortunately, there were not sufficient travel funds for the federal port agents; consequently, there was not a port samplers meeting this year in the Gulf; however, a meeting will be held in the Caribbean. It was noted that, as justification for securing funding, these meetings are actually part of the quality assurance/quality control aspects of the ComFIN. The meetings allow for interaction among the samplers and provides them a forum to discuss data collection methods, problems encountered in the field and potential solutions, and other related issues.
- It was noted that there needs to be a firm commitment from each state regarding the implementation of a trip ticket program. Texas has some concern about implementation of such a program and there needs to be discussion by state personnel to ensure this is the method for collecting commercial data that should be used.
- Alabama is attempting to have a pilot trip ticket program implemented by January 2000. They (as well as Mississippi) will use scanning technologies (similar to Louisiana's system) for entering the data. Another issue discussed concerned electronic reporting of the data. It was stated that there are some dealers (usually the high-volume dealers) who would be able and are actually interested in utilizing this technology for reporting the data. This issue will be pursued by the states and periodic updates to the FIN will be provided.
- The group discussed legislative issues regarding the implementation of a trip ticket program. Obviously, Louisiana and Florida have adequate laws and regulations to allow for the implementation of such a system. Texas's, Alabama's, U.S. Virgin Islands' and Puerto Rico's current laws and regulations are also adequate to allow for a trip ticket program. However, it appears that although the laws and regulations in Mississippi give the authority to collect data about commercial fishing activities, they place the onus on the Department to collect this information and not require the

dealers to report these data. Mississippi is exploring this issue and will make the necessary changes to allow for implementation of the program.

- There was concern by Mississippi and Alabama about compliance with the trip ticket program. It was noted that an integral part of this program is interaction with the dealers and fishermen to ensure that there is “buy-in” from the industry. It is important to involve the dealers and fishermen so that they are part of the process of developing the program. Without the support of industry, the trip ticket programs will not be successful. The U.S. Virgin Islands holds periodic meetings with their commercial fishermen to provide training on how to complete the necessary forms, provide an overview of the previous year’s data, discuss confidentiality issues, and other pertinent topics.
- The U.S. Virgin Islands has a voluntary program where commercial fishermen report catch records (on a trip level) on a monthly basis. There are approximately 400 commercial fishermen in the U.S. Virgin Islands. There are no dealers in the U.S. Virgin Islands. The ComFIN trip ticket data elements are mostly captured by the monthly reporting. If charter boats sell their catch, they are required to report the landings. In Puerto Rico, there is weekly reporting from fishermen; however, that information is not trip-based. There is also reporting from dealers and these data are reported on a trip basis. About 60% of the commercial landings are reported through dealers. The reporting was recently made mandatory and as in the U.S. Virgin Islands, the ComFIN trip ticket data elements are mostly captured by the reporting program. The law which required mandatory reporting also establishes a recreational fishing license. It is illegal in Puerto Rico for charter boat operators to sell their catch. There are approximately 1,700 commercial fishermen in Puerto Rico. Both U.S. Virgin Islands and Puerto Rico collect data on finfish as well as shellfish.

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**DRAFT**

**MINUTES**

**GULF OF MEXICO FISHERY MANAGEMENT COUNCIL**

**FLORIDA/ALABAMA HABITAT PROTECTION ADVISORY PANEL**

**TAMPA, FLORIDA**

**TUESDAY, SEPTEMBER 28, 1999**

**ATTENDANCE:**

Members

Alexander Stone	ReefKeeper International
Bob McMichael	Florida Marine Research Institute
Bob Jones	Southeastern Fisheries Association
Robin Lewis	Lewis Environmental Services
Andreas Mager	National Marine Fisheries Service

Staff

Jeff Rester	Gulf States Marine Fisheries Commission
Cheryl Noble	Gulf States Marine Fisheries Commission

Others

Augustin Ferrufino	Buccaneer Gas Pipeline Company
Fred Ayer	Continental Shelf Associates, Inc.
Steven Ellsworth	ENSR
John Dugger	PCS
Doug Frugé	US Fish and Wildlife Service
Steven Atran	Gulf of Mexico Fishery Management Council
Steve Heath	Alabama Department of Conservation and Natural Resources
Winnie White	Florida Marine Research Institute
R. Ruiz-Carus	Florida Marine Research Institute
Bob Vadas, Jr.	Florida Marine Research Institute
Andrew Sullivan	Florida Marine Research Institute
Peter Rubec	Florida Marine Research Institute
Greg Fairlough	National Marine Fisheries Service
David Dale	National Marine Fisheries Service

**Call to Order and Introduction of Advisory Panel Members**

The meeting was called to order by Chairman Bob Jones at 9:00 a.m., and the Advisory Panel members and guests introduced themselves.

### **Adoption of Agenda**

The agenda was adopted with the following changes. Dr. Peter Rubec was added to the agenda to provide a presentation on Habitat Suitability Modeling. D. Dale stated that the pipeline companies would be giving the pipeline presentation instead of him.

### **Approval of Minutes**

There were not enough members present for a quorum so the minutes from 1997 and 1998 were not approved.

### **Impact of Two New Gas Pipelines Between Mobile, Alabama and Central Florida**

S. Ellsworth of ENSR, representing Gulfstream Natural Gas System, gave a presentation on the proposed natural gas pipeline that would deliver gas from existing suppliers in Mississippi and Alabama to markets in central Florida. The pipeline would be approximately 720 miles long, with the marine portion being 36 inch diameter pipeline. Gulfstream Natural Gas System will apply for Federal Energy Regulatory Commission (FERC) approval in September 1999. In the fall of 1999 they will apply for Minerals Management Service approval and permits from the Corps of Engineers (COE), state, and other appropriate entities. Construction of the pipeline would begin in June 2001 and be completed by June 2002. A nearshore biological survey has already been completed. This survey was designed to document the occurrence oysters, seagrass, and live bottom in Mississippi, Alabama, and Florida waters.

A. Stone stated his concerns about live bottom and coral in federal waters. He asked if the pipeline would affect the Florida Middle Grounds. S. Ellsworth replied that the pipeline would be 15 miles southwest of the Florida Middle Grounds.

A. Mager asked how the pipeline would be installed. S. Ellsworth replied that offshore the pipeline would be laid on the seafloor by a barge. In water depths less than 200 feet, jetting would be used to bury the pipeline to the required depth.

B. McMichael was concerned with the sediment resuspension. S. Ellsworth stated that it could possibly be a problem in Mississippi and Alabama but that the course sediments in Florida would quickly settle out of the water column.

A. Ferrufino of Buccaneer Gas Pipeline Company gave a presentation on his company's proposed pipeline project. This project would be similar to the other proposed pipeline project and will come ashore north of Tampa. It will affect an 80 foot by 2,400 foot section of seagrass, which is proposed for replantation after the project is completed. This project would begin construction in January 2001.

D. Frugé asked about the expected life of the pipeline. A. Ferrufino responded that the pipeline would last approximately 40 years. D. Dale stated that the FERC will only be licensing one pipeline.

### **Proposed Navigation and Berth Improvements at Port Manatee in Tampa Bay**

D. Dale gave a presentation on the proposed navigation and berth improvements at Port Manatee. The Port was constructed in 1968, with minimal modifications since that time. The initial COE permit application was filed in September 1998. Phase I involves maintenance dredging of the existing facility. Phase II involves navigation improvements, and Phase III involves creating new berths and deepwater docking facilities. The current plan for the Port would affect 12.7 acres of seagrass, 1.84 acres of mangrove, 29.5 acres of unvegetated shallow bottom, and 44 acres of deepwater bottom. The NMFS has four primary concerns about the project. They are 1)the adverse impacts to 88 acres of estuarine bay bottom, 2)the mitigation plan relies heavily on converting existing habitat to other types of habitat, 3)there has not been a demonstrated need for the additional facilities, 4)and the alternatives were too narrowly focused to adequately address the issues. The Florida Department of Environmental Protection, before their merger with the Freshwater Game and Fish Commission, opposed the project, as did the USFish and Wildlife Service (USFWS). The Tampa Bay Estuary Program and Tampa Bay Regional Planning Council have also expressed concerns about the project, which will be re-advertised on public notice due to changes to the original plan.

### **Habitat Suitability Index modeling in Florida's estuaries**

P. Rubec updated the Advisory Panel on the Habitat Suitability Index modeling he is doing on Florida's estuaries. This type of modeling will allow researchers to predict the distribution of species in estuaries that do not receive routine monitoring. The models take into account salinity, temperature, depth, substrate, submerged aquatic vegetation, and dissolved oxygen. Rubec stated that he is currently refining the models.

### **Status of the New Marine Reserves Off the Florida Panhandle**

S. Atran gave a presentation on the new gag marine reserves off the panhandle of Florida. In October of 1997, gag, a species of grouper, was considered to be overfished. Gag change from females to males as they get larger. The males tend to stay farther offshore than the females. Researchers are concerned because the percentage of males to females has dropped in recent years. Gag also spawn in large aggregations, making them easy targets for fishermen. A marine reserve could be used to protect males and the spawning aggregations. The Council first proposed to close a 423 square mile area to fishing. Fishermen were not happy with closing an area this large to all fishing, so at the July Council meeting, two smaller areas were proposed. The two areas are known as Steamboat Lumps and an area known as Madison and Swanson. The new proposed closed areas are approximately 220 square nautical miles. These areas make up around 20% of the identified gag spawning areas. Madison and Swanson is a high relief area and Steamboat Lumps is a low relief area. There is a four year sunset clause on these areas. Researchers want to study these areas and see how they affect the gag population. If NMFS approves this closure, it should go into effect in 2000.

### **Update on Alabama's Expansion of their Artificial Reef Zone**

S. Heath gave an update on Alabama's expansion of their artificial reef zone. He started by giving a history of the artificial reef program in Alabama. The charter boat industry started deploying artificial reefs off Alabama's coast in the 1950s. Until 1987, there were no designated areas for the deployment of artificial reefs. Shrimpers were having trouble because their nets were hanging on these artificial reefs. Alabama then designated three areas as artificial reef zones. In 1997, the

artificial reef zones were expanded into three more areas. These areas were farther offshore and in deeper waters. Heath also stated that researchers are studying different types of reef modules and their effectiveness as artificial reefs. Alabama has started a new program of developing inshore artificial reefs in Mobile Bay. These new reefs are being called "Roads to Reefs," because they are using discarded or unuseable culverts and parts of old road beds to make the reefs. These reefs are also being used to attract juvenile red snapper away from shrimping areas. These reefs are lined around the outside with physical barriers that prevent trawling.

#### **Revision of the Council's Habitat Policy and Procedures**

J. Rester stated that the current Council Habitat Policy and Procedures document was updated, and it was decided to break the document into three separate documents: the Habitat Policy and Responsibilities document, the Habitat Procedures document, and the Wetland Management and Mariculture Policy. He also stated that the NMFS/Council Concurrence Paragraph was updated to include changes to the Magnuson Act. Rester also discussed some of the problems that the other Advisory Panels had with the documents. A suggestion was given at another meeting that these documents need an accompanying document to define some of the terms that are used in them. The documents are very general because the five gulf states are different and the documents should not be specific for each state. A. Stone stated that he found the documents to be very well put together and contain acceptable criteria that define what a significant project is.

R. Lewis stated that he still has the same problems with these documents that he did with the EFH amendment, specifically that the documents are very reactive and not proactive in terms of habitat management. His specific examples were that there are three policy objectives but only the first objective is discussed throughout the document. There needs to be balance between the three objectives. He gave a specific example of the loss of seagrass in south Florida. The Port Manatee project would impact 13 acres of seagrass, yet over 130 acres of seagrass have been lost in the Keys due to prop scarring. This did not involve a permit, yet it has 10 times the impact. He emphasized that impacts that are not permitted need to be addressed also, and the documents do not do that. A. Stone stated that this was correct, and he feels that the current language could be modified to address those concerns. A, B, C, and D on page 2 could be changed to more thoroughly balance the document between managing negative impacts and creating positive habitat opportunities regarding the creation and restoration of habitat. R. Lewis stated that he would send in suggested language to improve the Habitat Policies and better reflect the ideas of creation and restoration of habitat.

A. Mager stated that he would like to challenge the Advisory Panels to provide agenda items that address how to deal with unpermitted activities that negatively affect habitat. These could be presented to the Council as an action plan. He stated that the Council could play an important role in supporting habitat restoration projects, adding that language could be added under the Habitat Protection Committee structure and role that would authorize the Committee address habitat restoration projects and show Council support for such projects. He also stated that the Habitat Policy might need another separate section dealing with proactive issues (habitat restoration and creation). D. Frugé agreed that a separate section to expand the role of the Habitat Protection Committee should be added. A. Mager wanted to stress that the Council cannot lobby. If an organization needs support, then the Council can show their support especially if a project can show a potential benefit to EFH. A. Stone added some language to the role of the Habitat Protection



Advisory Panels. J. Rester read this language to the group and everyone agreed that it should be added.

A. Mager suggested that B. 2 on page 3 should be deleted concerning anadromous fish since the Council does not manage anadromous fish. He stated that the reason this paragraph was in the Magnuson-Stevens Act was because of salmon on the west coast. Salmon are managed through state and federal programs, while some listed under the Endangered Species Act as threatened or endangered on the west coast.

A. Stone had a problem with the criteria to define significant projects. A. Mager suggested changing significant direct impact to significant direct adverse impact, to clear up any confusion.

The AP agreed that a new item should be added under D. Criteria to Define Significant Projects and that would deal with projects that have a positive impact on habitat. The AP also agreed that item 4. should be deleted. The nature of the project (highly controversial) should not determine whether the project is significant or not.

A. Stone had a question about the Habitat Procedures document. In the third paragraph, the sentence starts by stating "if a project appears to have significant negative impacts on EFH", to whom does this apply? A. Mager stated that the Council will operate through its partners (NMFS, FWS, and EPA). These agencies can contact the Council. Council members and AP members can also notify the Habitat Support Specialist of significant projects.

A. Stone was concerned with the small time period that the Council is allowed to comment on COE public notices. He was interested in working something out that would let the agency know that the Council may have concerns and extend the comment period until the Council can review the project. A. Mager stated that this is unworkable. The Council already has the ability with the Concurrence Paragraph to state that they are concerned about the impacts from a project, and that they want the right to comment further at a later date.

A. Mager stated that the Wetland Management Policy needs to be entirely redone. It is not particularly relevant anymore. A working group should be set up to draft the new policy. A new seagrass policy might also be drafted at the same time to deal with seagrass issues in the Gulf of Mexico. R. Lewis concurred that a new Wetland Management Policy needs to be drafted. D. Frugé stated that under the Mariculture Policy, exotics need to be defined. Clarification of what "exotics" means was requested.

A. Mager stated that in the mid-1980s, the Council and NMFS developed a concurrence paragraph that allows the Council to quickly deal with projects that have significant adverse impacts on EFH. This allows the Council to voice their opinion for the record. A. Stone asked what triggers the use of this paragraph. A. Mager stated that it concerns projects that NMFS is strongly concerned about or ones they feel should be elevated. NMFS will then contact the Council about using the Concurrence Paragraph.

#### **Update on EFH Assessments in Council FMP Amendments**

A. Mager discussed the new EFH Assessment requirement for all Council FMP Amendments. He stated that under the consultation rules of the Interim Final Rule, there is a requirement for all federal

agencies to consult on activities that potentially affect EFH. An EFH assessment must be prepared. The EFH assessment has to be prepared for Council actions also. The assessment must determine the effects of Council actions and, particularly, the effects of management actions. This means that the Habitat Conservation Division and the Sustainable Fisheries Division, both in NMFS, must now consult on actions that could affect EFH.

**Update on the Status of the EFH Lawsuit**

J. Rester stated that American Oceans Campaign, Cape Cod Commercial Hook Fishermen's Association, Inc., Florida Wildlife Federation, ReefKeeper International, Center for Marine Conservation, Institute for Fisheries Resources, National Audubon Society, Natural Resources Defense Council, and Pacific Coast Federation of Fishermen's Associations are suing the U.S. Department of Commerce, National Oceanic and Atmospheric Administration, National Marine Fisheries Service, New England, Gulf of Mexico, Caribbean, North Pacific and Pacific Fishery Management Councils on their EFH amendments. The allegations made about the Gulf of Mexico are that the EFH amendment fails to assess fishing gear adequately and fails to minimize the adverse effects of fishing on EFH to the extent practicable, in violation of the explicit requirements of the MSFCMA and implementing regulations. Defendants preparation and approval of these amendments therefore violates the MSFCMA and is arbitrary, capricious and contrary to law in violation of the Administrative Procedure Act. In addition, the defendants unlawfully prepared and approved these amendments in reliance upon inadequate environmental analysis in violation of the National Environmental Policy Act.

**Other Business**

J. Rester asked about any future agenda items for the next meeting. A. Mager would like to see a joint meeting between all of the Advisory Panels to address issues of common interest.

With there being no further business, the meeting adjourned at 2:25 p.m.

Port Sampler Meeting  
Meeting Summary  
October 7-8, 1999  
St. Croix, U.S. Virgin Islands

The meeting was called to order at 8:50 a.m. and the following people were present:

Guy Davenport, NMFS, Miami, FL  
Ivan Mateo, USVIDFW, St. Croix, USVI  
Sheri Caseau, USVIDFW, St. Thomas, USVI  
Efrain Hatchetti, USVIDFW, St. Thomas, USVI  
Hector Lopez, PRDNER, Mayaguez, PR  
Jesus Leon, PRDNER, Mayaguez, PR  
Daniel Matos, PRDNER, Mayaguez, PR  
Luis Riveria, PRDNER, Mayaguez, PR  
Walter Irizarry, PRDNER, Mayaguez, PR  
Willie Ventura, USVIDFW, St. Croix, VI  
Hector Riveria, USVIDFW, St. Croix, VI  
Toby Tobias, USVIDFW, St. Croix, VI

Overview of ComFIN

D. Donaldson gave an overview of the Fisheries Information Network (FIN). He stated that FIN consists of two major components: ComFIN and RecFIN(SE). Each program has its own mission, goals, and objectives and address specific issues related to area of emphasis. The constituencies served by ComFIN include the state and federal agencies responsible for management of fisheries in the region, federal fishery management councils, interstate marine fisheries commissions, and the commercial and recreational fishermen and the associated fishing industries. The mission of ComFIN is to cooperatively collect, manage, and disseminate marine commercial and anadromous fishery data and information for the conservation and management of fishery resources in the Region and to support the development of an inter-regional program. There are four goals of ComFIN. They are: plan, manage, and evaluate commercial fishery data collection activities; implement a marine commercial fishery data collection program; establish and maintain a commercial fishery data management system; and support the establishment of a national program. He presented a figure which explained the organization structure of ComFIN. He stated that the backbone of ComFIN is the trip ticket program. He reviewed the commercial catch and effort data collection program (trip ticket system). The program is a mandatory, trip-based system with all fishermen and dealers required to report standardized data elements. The catch and effort data is collected at trip-level with resolution for each gear and area combination. The dealers are required to submit a completed trip ticket. It was noted that the interaction between dealers and fishermen is important since both fishermen and dealers be responsible for accurate data collection. Any marine fishery products landed in the state must be reported by dealer or marine resource harvester acting as dealer. ComFIN is developing standard forms to provide for consistency among agencies and still developing methods for quantifying the amount of trips where there was no catch. ComFIN is also in the process of developing methods to verify the accuracy of submitted information. He reviewed the data elements for ComFIN trip ticket program which included date, species and

quantity landed, ex-vessel value or price, state landed, dealer ID, primary gear and area fished, quantity of gear, days at sea, fishing time. D. Donaldson reviewed the various validation methods being considered by ComFIN. They included fishery-dependent and -independent surveys such as port sampling programs, at-sea observer programs, law enforcement presence, distribution of periodic data summaries to fishermen for self-verification, mandatory random fish-house/fishermen audits and inspections, and other appropriate methods. He then reviewed the data elements for the biological sampling module which included date, species, state and county landed, gear and area fished, market category, length and weight, and sex. Lastly, he presented the ComFIN social/economic module. The data will be collected via three separate surveys: an annual fixed cost survey (directed at owner/operators; a trip cost survey (for most recent commercial trip); and an annual owner/captain/crew survey (for sociological data). It was noted that FIN is working closely with ACCSP to ensure compatibility among programs. The last slide presented how the current status in commercial data collection relates to the ultimate goal of ComFIN.

#### Overview of Cooperative Statistics Program (CSP)

G. Davenport provided an overview of the Cooperative Statistics Program (CSP). He stated the original intent of the program was to develop a joint initiative for the collection of commercial fishery statistical data for the marine fishery resources of the Southeastern United States (North Carolina through Texas), Puerto Rico and the US Virgin Islands. He presented a brief history of the program. The concept was established in late 1970's and was implemented by 1982 Memorandums of Understanding(MOU) which were signed by several States. By 1984 all participants had a signed MOU with NMFS. The federal funding is provided by a Congressional add-on to the NMFS, which allocates preset amounts to each participant via a cooperative agreement. The initial funding for FY83 approved by Congress was \$1.7 million which after the administrative surcharge delivered \$1.638 million. All eleven partners agreed to NMFS Southeast Fisheries Science Center (SEFSC) would retain 39% leaving \$1 million for the participants. The \$1 million was proportioned based on mutually agreed percentages. There have been two significant budget reductions imposed on Federal agencies by Administrations and Congress. First reduction was in FY87 lowering the amount by \$126K and FY88 by \$6.5K. FY89 was a total of \$132.8K less than the original level. In addition NMFS had a \$90K reduction to the SEFSC for data collection and management. In FY95, SEFSC increased CSP funding by \$228.2K , \$64.2K to cover budget cuts and an additional \$164K for selected States. In FY99 CSP funding is estimated at \$1.102 million. He provided the mission goals of the program which are: to manage and evaluate a coordinated State/Federal marine commercial fishery statistics program for the Southeast Region; to collect State/Federal marine commercial fishery data for the Southeast Region; and to maintain an integrated marine commercial fishery data management system for the Southeast Region. He noted that the goals and objectives of the CSP are very similar to the ComFIN. He next presented an overview of funding activities for Puerto Rico and U.S. Virgin Islands. In Puerto Rico, the initial funding of \$82.4K for part of 1982 and 1983 was provided to Puerto Rico. In 1983, the base funding of \$87.2K was supplemented by \$31.8K to collect billfish statistics from recreational fishing. This funding included 5 port agents to collect statistics from the commercial fisheries via their trip ticket system and an additional 2 agents to collect billfish data. Bioprofile data from reef fish, spiny lobster, and oceanic pelagic species were collect by port agents. In 1984, the funding was reduced to \$108K and by 1985 the supplemental funding was eliminated leaving the funding at the base amount of \$87.2K. Because of the supplemental funding reduction the billfish data collections were eliminated. In 1986, CSP funding

was reduced to \$84.2K but data collection was supplemented by Federal funding under the 88-309 program. In 1989, CSP funding was reduced to \$78.9K, which is the current level. During the past several years the 88-309 funding has been replaced by Inter-jurisdictional Fisheries Program funds. For the U.S. Virgin Islands, partial funding for FY82 of \$72.8K was used to hire 2 port agents. The agents collected bioprofile data from reef fish and spiny lobster. Under this agreement the USVI provided annual landings statistics from their annual license renewal reporting requirements. A small amount of funding was allocated for collecting billfish data. In 1983, funding was increased to \$97.2K from the base \$82.1K. These addition funds were for billfish and bioprofile data collection. In 1984, funding was reduced to the base level. Billfish data collections were dropped. In 1987, the funding was supplemented for increased sampling to \$125.2K. In 1988, the funding was reduced to \$73.8K due mainly to NMFS budget cuts. In 1989, the grant was reduced by \$10K because the application was late and NOAA would not pre-award the grant. In 1990, base funding of \$73.8K was provided. Except for 1991, because of Hurricane Hugo devastation, funding has maintained a base \$73.8K to present. G. Davenport closed his presentation with providing information about the State/Federal Liaison Office, National Marine Fisheries Service, Southeast Regional Office in St. Petersburg, Florida. He stated that the mission statement of the National Marine Fisheries Service Southeast Region, State/Federal Liaison Office is responsible for facilitating the conservation, development and management of marine and estuary resources in the U.S. Territorial Sea and the Exclusive Economic Zone (EEZ) through competitive and noncompetitive grants and cooperative financial assistance programs. He provided a description of the grants and cooperative programs funded through this office.

**The meeting was recessed at 10:30 a.m.**

For the rest of the day, the group visited a commercial fishing dock and reviewed sampling techniques, fish identification methods, and other related sampling procedures. The group worked up two samples at the commercial dock - one in the morning and one in the afternoon.

**October 8, 1999**

**The meeting reconvened at 9:00 a.m.**

Review of Sampling Methods

D. Matos made a presentation regarding Puerto Rico's commercial sampling activities. He stated that the Department's Fisheries Laboratory in Mayaguez was established in 1971. The main purpose of the lab is to provide for the better management and conservation of the marine resources of Puerto Rico. There are three programs that are administered through the lab: fishery-independent data collection program (SEAMAP), research program, and fishery statistics program. The fisheries in Puerto Rico waters consists of multi-species and multi-gears. The size of the fish captured by commercial gear has decreased over time. The types of gears used consists of lines (trolling, bottom, hand, etc.), scuba (for conch and spiny lobster), traps (for fish and spiny lobster), and nets (gill nets, fish seine, trammel nets, cast nets). Approximately 90% of the vessels in the commercial fishery fall within the 16 - 24 feet range. Of the larger vessels, most of them participate in the deep-water snapper fisheries. The continental shelf around the Puerto Rico is very narrow especially in the northern part of the island. There are 42 coastal municipalities and approximately 90 fishing sites for commercial activity. The Department samples 3 days per week (12 days per month) at randomly

selected sites to collect the commercial data. In addition, the Department administers a trip ticket program to collect in which municipality the fish were landed, what fishing center the fish was brought to, number of trips, species (including weight, price, gears used, and quantity of gear). Currently, fishermen can combine trips on one ticket but the Department is working on changing the regulation to include on one trip per ticket. The trip ticket program is not mandatory at this time however, efforts are underway to make the program mandatory.

D. Matos presented some graphs from the commercial data that have been collected in Puerto Rico such as landing from 1971-1998, distribution of the species landed, percentage of the different types of gears used, and landings by gear.

T. Tobias presented U.S. Virgin Islands' commercial sampling activities. The U.S. Virgin Islands has two offices: their main office is in St. Thomas which has 12 people and there is a sub-office in St. Croix which has 5 people. The Division has a total of 6 research vessels to assist in the collection of data. All the funding for data collection activities in the U.S. Virgin Islands comes from federal sources. The majority of money (~80%) is used for the collection of recreational data. The commercial fisheries in the U.S. Virgin Islands is similar to Puerto Rico. It is a multi-species, multi-gear fishery. The commercial vessels are generally small and there are approximately 400 commercial fishing vessels in the U.S. Virgin Islands. The continental shelf on St. Croix is extremely small while the shelf at St. Thomas is a larger area than in Puerto Rico. Trap fishing is the preferred gears on St. Thomas while the use of traps is declining on St. Croix and other gears are increasing in use. The changes in the commercial fisheries are similar to that in Puerto Rico. Several species are no longer economic viable as a fishery and although some of the species are protected during critical life stages (during spawning aggregations, for example) these regulations are not strictly enforced.

T. Tobias stated that commercial fishermen are required to report their catches to the Division on an annual basis. The Division is attempt to require the fishermen to submit monthly catch information. The commercial fishing year is from July 1 - June 30. The Division conducts seminars with commercial fishermen to present the previous year's data, review the forms they must complete, explain the reporting requirements, and discuss the pertinent federal forms fishermen must complete. There are some quality assurance/quality control measures that are used to ensure the completeness of the data. For the forms that are sent to the Division's office, these are checked for correct responses as well as completeness. If there are errors or blanks, the fishermen are contacted to correct the problems. If the forms are received by mail, the fishermen are contact via letter and asked to correct the errors and resubmit the forms.

T. Tobias presented a summary of landings for commercial fishing as well as biostatistical data. The data presented represented information collect on St. Croix only. T. Tobias noted that the biostatistical data is collected on a voluntary basis and the complete catch is sampled.

### Open Discussion

D. Donaldson asked the group if they believed this type of workshop was useful to the port agents. The group believed that this type of meeting did provide some benefit by informing the samplers in the Puerto Rico and U.S. Virgin Islands about what each of them were doing in terms of data collection. It was noted that these meetings could be held on an annual basis if there was a need. The group began discussing possible topics to be addressed at the next meeting. One issue that was raised was the need for representative from the Gulf of Mexico to present the methods that are used in that region for data collection. It was also noted that it might be possible to have a

presentation about some of the research being conducted regarding fisheries issues. The group believe it might also be interesting to have presentations by the other island countries in the Caribbean regarding their sampling activities for commercial fishing. It was noted by the group that although the islands are very close in proximity, they have very distinct fisheries. It was noted that it is difficult to adapt sampling strategies used in the Gulf of Mexico and Atlantic coasts into the Caribbean because of cultural differences, structure of the fisheries, and other factors. It was suggested that this topic might also be discussed at the next meeting. D. Donaldson stated that he would contact participants next year to begin the planning of the next port samplers meeting,

**There being no further business, the meeting was adjourned at 11:45 a.m.**

**TCC ANADROMOUS FISH SUBCOMMITTEE  
MINUTES  
Tuesday, October 19, 1999  
Biloxi, Mississippi**



Chairman Doug Frugé called the meeting to order at 8:40 am. The following members and others were in attendance:

**Members**

Michael Bailey, NMFS, St. Petersburg, FL  
Norman Boyd, TPWD, Port O'Connor, TX  
Jim Duffy, ADCNR/MRD, Dauphin Island, AL  
Doug Frugé, USFWS, Ocean Springs, MS  
Alan Huff, FFWCC, St. Petersburg, FL  
Charles Mesing, FFWCC, Tallahassee, FL  
Howard Rogillio, LDWF, Lacombe, LA  
Larry Nicholson, GCRL, Ocean Springs, MS

**Staff**

Ronald R. Lukens, Assistant Director, Ocean Springs, MS  
Nancy K. Marcellus, Administrative Assistant, Ocean Springs, MS

**Others**

Robin Bruckner, NMFS, Silver Spring, MD  
Mara Booth-Miller, USCG, Miami, FL  
David Cinalli USCG, Miami, FL  
Bob Cooke, USFWS, Atlanta, GA  
Capt. Jim Twiggs, MS Charter Boat Capt. Association, Biloxi, MS  
John Tennyson, NMFS, Pascagoula, MS  
Jim Winters, NMFS, Pascagoula, MS

**Adoption of Agenda**

Robin Bruckner's (NMFS, Silver Spring, MD) video presentation on NMFS Community-Based Restoration Program was added to the agenda as the first item of business.

Item #8, "Presentation on Pascagoula River Contaminants GIS Database" was deferred until the next Subcommittee meeting.

Under "Other Business" Frugé indicated that he would report on the status of stocking Gulf race striped bass in Toledo Bend Reservoir, and a meeting he attended a week before the current meeting regarding a proposed reservoir on the Bouie River, a Pascagoula River tributary, near Hattiesburg, Mississippi.

Under "Other Business" C. Mesing asked to show a video on striped bass summer habitat.

**L. Nicholson made a motion to adopt the agenda as amended. C. Mesing seconded the motion, which was unanimously approved.**



### Approval of Minutes (3/16/99)

C. Mesing made the motion to approve the minutes from March 16, 1999. The motion was seconded by H. Rogillio and unanimously approved.

### NMFS Community-Based Restoration Program

Robin Bruckner from the NMFS Office of Habitat Conservation in Silver Spring, Maryland reported on the NMFS Community-Based Restoration Program. In 1996, the National Oceanic and Atmospheric Administration (NOAA) Fisheries Restoration Center established a highly successful program to involve communities in local marine and estuarine habitat restoration. The program reaches out to local constituencies to accomplish meaningful, neighborhood restoration projects. Projects are often identified by individuals and civic organizations, and are successful because they have significant community support and depend upon citizens' hands-on involvement to implement the restoration.

NOAA solicits proposals for locally-driven habitat restoration projects that address important habitat issues within communities. Program emphasis is on using a grass-roots, bottom up approach to restoring fishery habitat across coastal America. Project proposals are reviewed by NMFS technical staff, and awards are made on a competitive basis to those projects most closely aligned with NOAA's trust responsibilities for marine resources.

The Subcommittee viewed a video which was recently released by NMFS. It focuses on anadromous fish restoration that has been drawing national media attention in Adobe Creek, California. It was one of the first community based restoration projects in which the Office of Habitat Conservation participated. This project had been ongoing for about 10 to 12 years before NMFS got involved. The 11 minute video is designed to project the concept of community based restoration and how effective the approach can be.

For more information visit their website at: [www.nmfs.gov/habitat/restoration](http://www.nmfs.gov/habitat/restoration).

### Agency Reports

Florida Fish and Wildlife Conservation Commission - A. Huff reported that effective July 1, 1999 a new agency was created in the State of Florida called the Fish and Wildlife Conservation Commission. It combined most of law enforcement from the old Florida Department of Environmental Protection, the Marine Patrol, what used to be the Florida Marine Fisheries Commission, which had a staff of 12-13, most of the Division of Marine Resources in the Florida Department of Environmental Protection, and almost doubled the size of what used to be the Florida Game and Freshwater Fish Commission. It was a good balance, and avoided the perception, at least from the Florida Marine Research Institute's point of view, that one agency took over another agency. The Florida Marine Research Institute was moved as a whole rather than being broken up, so the same network of field labs and the same resources still exist. They are adapting to working under a commission. In the new Commission there is a Division of Marine Fisheries, Division of Freshwater Fisheries, Division of Wildlife, the Florida Marine Research Institute, a Division of Administration, and a Division of Law Enforcement.

C. Mesing reported that their stewardship project is going well, and everything is going as scheduled. The radio telemetry work is revealing interesting information on where the fish go in the summertime, at what age they may be staying around the coast, and at what age they may be leaving the coast. They are focusing on two age classes, age two and age three. The age two fish can be as small as two pounds, and they seem to stay around the coastal area. They will find cool water, if possible. They hide under bridges or other shade that results in cooler water than ambient river temperature. It was thought that several tagged fish were dead, but they were under a Highway 98 bridge for about two months. When the ambient temperature

cooled, they began moving again. Mesing indicated that he feels that the stewardship project will produce valuable information.

Mesing described a 7 minute video on underwater surveys of the Chipola River which he plans to show to the Subcommittee under Other Business. A dam was removed on the Chipola River about 10 years ago, and each year they have been doing surveys looking for fish to see if they are finding the cool water habitat. This expanded habitat availability was a major impetus for the Service's stocking program at the coast. Prior to that there was not sufficient cool water habitat for fish of about 12-16 inches. During 1999, several fish between 15 and 40 pounds were located in the Chipola River and were recorded on video tape in a cave and springs underneath Marianna Caverns. A broodfish from the Blackwater Hatchery was released in the Chipola River and was subsequently located in the system during a SCUBA survey. This may indicate that it could be worthwhile to recycle broodfish after spawning. It is hoped that after the summer the fish will head downstream.

Mesing explained that a lot of their time in the last six months has been devoted to the Corps of Engineers (COE) dredging project on the Apalachicola River. They have been fighting this battle for 15 years. In the past the COE deposited sand just about anywhere they desired. A new permit was issued in 90-91 which lasted for five years, but there were no conditions in the permit that would stop current dredge material disposal practices. That permit expired, and for the next two years the COE operated without a permit. As a result of state government and Congressional interest, they were able to get a permit for the COE with 23 conditions that severely restricts what they could do. The COE then threatened to shut down the dredge maintenance program. There was a lot of talk about deauthorization of the project, and although they liked the idea, they knew if it was deauthorized and navigation ceased, they may never get any water released from the upper reaches of the system during the summer months when it is needed. The COE is accepting the permit as was written by the state, and Congress is providing additional funds to do the project right. He indicated that things seem to be going in the right direction. Within the permit conditions, there is a requirement to restore four creeks each year. Some of these creeks, as in regards to striped bass, are striped bass cool water habitats that have been filled in over the years, either from regular deposition or sand deposition that occurs above the creeks at some of the sites. One creek was restored about 4 years ago, and it brought in hundreds of fish during the summertime. The program is concerned that there are no regulations to restrict anglers from taking the fish while they are in the refuges. As these creeks are restored the state will probably be considering new regulations.

Louisiana Department of Wildlife and Fisheries - H. Rogillio reported that their stewardship project is going well. Regarding radio tags, water temperature has been high, and lack of flow and salinity in Tchefuncte River has made tracking difficult. During 1999, phase 1 and phase 2 stocking did not go well due to a shortage of fish. However, they did catch quite a few fish this year in the Tchefuncte River that could be phase 1 or phase 2 fish from last year. These fish were sent to Dr. Wirgin for genetic analysis. The results are not yet available. Recently a meeting between Louisiana and Texas was held to discuss the possibility of putting Gulf strain striped bass in Toledo Bend to help establish a broodstock source. Texas is willing to help establish a Gulf population there and has decided that they would support the initiative with an assurance that they would get Gulf strain fish consistently over a period of 3-5 years. Rogillio indicated that they would like to cooperate and establish a Gulf striped bass population in Toledo Bend.

Frugé added that Texas wanted a commitment to provide the fish, not necessarily a guarantee, because production levels cannot be guaranteed from year to year. Texas suggested that there should be a written agreement between the various entities expressing the commitment of fish for the reservoir. Frugé advised that this is something that he was going to try to develop over next couple of months in preparation for discussion at the *Morone* Workshop typically held in January or February each year. Frugé noted that Toledo Bend has proven to be a good striped bass reservoir. If efforts were successful in getting Gulf strain striped bass established there, it would go a long way toward providing the broodfish needed in the future.

Regarding Gulf sturgeon the LDWF met with Frugé and the FWS regarding concerns about bycatch in trawls and other gear. Certain areas in the system have been closed to various types of netting, and TEDs have been in trawls for a few years. Gill nets in the Pontchartrain and Lake Bourne areas have also been banned. They know that the fish are being incidentally caught in trawls, but the extent and implications are unknown. The meeting prompted LDWF to request a study and develop a proposal. That project would entail repeating a study conducted in 1970, when Gulf sturgeon were found in four rivers of the Pontchartrain basin. The study would locate fish and use sonic tags to find out where in Lake Pontchartrain and Lake Bourne the fish are staying during the winter and when they might be susceptible to trawls.

Gulf Coast Research Laboratory - L. Nicholson reported that they had a bad culture year during 1999. The GCRL stewardship project is designed to compare Gulf and Atlantic strain fish in an intensive culture environment. In addition the fish reared in the intensive culture system are released and monitored in the river system. Comparisons with tagged and untagged fish that were released are being conducted and tag return and catch data analyzed. They started out with 3 different groups of fish, including Gulf strain from the Coosa River which were B2s, Atlantic strain from the Coosa River which were C1s, and Atlantic strain from Toledo Bend that are probably D1s. Nicholson had approximately 300,000 from each group. They harvested 109,587 fish which weighed 420.66 kilograms, which was about a little over 11% total survival of phase 1 culture. This year, rather than releasing the phase 1s that were in excess of tagging needs for phase 2 culture, they put fish in some ponds at the Mississippi State aquaculture facility. Those fish are still in those ponds. The phase 2 culture is ongoing and Nicholson anticipates tagging within a week. They had bad phase 2 survival during 1999 and are working hard to keep things going this year. It has not been a good year tag returns either, with no really large fish or large numbers of fish being reported.

Texas Parks and Wildlife Department - N. Boyd reported that they are not active in marine striped bass. Their inland group continues to work with striped bass and produced 3 million fry and 3 million fingerlings during 1999. They stocked 10-15 lakes with 1999 Atlantic fish. Last October Texas had some huge floods which increased the number of stripers seen in fishery independent samples. It was not much, but increased from 1 or 2 stripers in the year to 6-9.

Texas now has limited entry programs in effect for three of their four major commercial fisheries: shrimp, crab, and the finfish licenses. The only fishery left is the oyster fishery. Texas is also in the process of testing different fish bycatch devices. Probably within the next one or two years some kind of BRD will be required in shrimp trawls in state waters.

Mississippi Department of Wildlife, Fisheries, and Parks - Not represented.

Alabama Department of Conservation and Natural Resources - J. Duffy stated that he had nothing new to report regarding marine anadromous work. He wanted to remind everybody that they put 38,000 stripers in the Perdido River 5 years ago. Their administrators chose not to pursue those fish. Those fish are still in the system and are being caught in relatively small numbers. That system, which has cool water refugia, supports 30 and 40 pound fish. If anyone is interested in looking, there are a lot of 5 year old fish out there that were stocked as Phase 2s. Those fish came from the Carbon Hill hatchery.

Duffy emphasized that there is a lot of interest in striped bass with this Subcommittee. He also stressed that the states need to start concentrating on each of the individual problems and start pooling resources because there is not enough money in striped bass in the Gulf of Mexico region, or elsewhere, to make significant progress. Frugé added that the Subcommittee is on the verge of rewriting the Striped Bass FMP, and that presents the Subcommittee the best opportunity to make some decisions about the future of the striped bass program in the Gulf.

National Marine Fisheries Service - M. Bailey reported that when he attended the last meeting he realized that NMFS was not represented on the Subcommittee, so he went back and talked with Andy Kemmerer and

Bill Hogarth. As a result, Bailey was asked to represent NMFS on the Subcommittee. Bailey's office, Intergovernmental and Recreational Fisheries, is the NMFS branch that is charged with administering Anadromous Act money. He indicated that he would like to work with the Commission to get additional funds from the NMFS appropriation under the Anadromous Fish Restoration Act redistributed such that some of those funds will be available for work in the Gulf of Mexico region.

U.S. Fish and Wildlife Service - Frugé reported that the Panama City FWS office has initiated a month long sampling program to estimate Gulf sturgeon populations in Choctawhatchee Bay. They are also continuing a telemetry project in the river to locate spawning sites and assess coastal habitat use in the bay. They have contracted with a video producer to make a 15 minute educational video on Gulf sturgeon. They will also be conducting sonic tracking of Gulf sturgeon in Choctawhatchee and Apalachicola Bays. The Ecological Services office in Georgia has been involved in discussions with the Corps of Engineers and the State of Florida regarding potential changes at Jim Woodruff Dam to facilitate fish passage. Frugé continues to work to finalize a range wide status report on Alabama shad.

### **Stewardship Projects: Technical or Administrative Concerns**

Frugé indicated that this item was placed on the agenda in the event anyone present had any technical or administrative concerns regarding the stewardship projects. Frugé mentioned that he has some genetic data from Dr. Ike Wirgin on genetic identity of fish collected in sampling.

### **Gulf Striped Bass Fishery Management Plan Revision**

Lukens reported that in preparing for FY2000, the GSMFC IJF program realized that they will not complete the two FMPs that have been in progress, which means that the revision to the Gulf Striped Bass Fishery Management Plan will not begin in January 2000. This will slow down the process but the Subcommittee should continue to review the FMP and make preparations for a revision as soon as one of the previous FMPs is complete.

Lukens outlined some of the items he found during his review of the Striped Bass Fishery Management Plan that will likely require revision:

- Section 2.0 - needs to be completely revised. Most of the information for Section 2.0 will be available from staff.
- Section 2.5 - FMP Objectives need to be discussed.
- Sections 2.1 and 2.2 - need to be updated and moved to Section 3.0.
- Section 2.3 - needs to be updated and moved to another section.
- Section 3.0 - needs to be updated and reformatted.
- Section 4.0 - needs to be completely updated and reformatted to include EFH approach.
- Data and information from the document entitled "Habitat Criteria for Striped Bass" needs to be incorporated into Section 4.0.
- Amendment 1 to the FMP (using current regulations) needs to be incorporated into the appropriate sections.
- All genetic data and information needs to be incorporated into the appropriate sections.

- Appendix A in Striped Bass FMP needs to be taken out.
- Appendix B, striped bass recapture data, needs to be discussed.

Subcommittee members should continue to follow through on assignments made at the last meeting in anticipation of a revision to begin some time during 2000.

**Follow-up on Hatchery Resolution**

The Subcommittee was provided a response letter from FWS Acting Director John Rogers regarding the Commission’s Resolution entitled “Need for a Continued National Fish Hatchery System.” The letter provides a general overview of the situation with the national fish hatchery system and thanks the Commission for their interest and support. It concludes that together the FWS and the Commission can secure and improve the system to carry out all of its responsibilities.

**Presentation on Pascagoula River Contaminants GIS Database**

Deferred until next meeting.

**Gulf Striped Bass Brochure**

Frugé reported that there has been no major changes to the draft of the Gulf Striped Bass Brochure that Laura Jenkins presented to the Subcommittee at the March meeting. It is now time to go forward with publishing of the brochure. Gail Carmody from the Panama City FWS office gave the Subcommittee three options for publishing: 1) to publish as a FWS publication with FWS paying for publication costs and distribution; 2) FWS to give the document to the Commission and allow the Commission to publish it as a Commission document; or 3) FWS to give a computer file to the various states to publish as individual state documents.

The Subcommittee had no strong preferences and agreed to allow FWS to go forward with publishing the Gulf Striped Bass brochure as a FWS document.

**Florida Sturgeon Working Group**

A. Huff reported on the Florida Sturgeon Production Working Group, which is administered by the Florida Fish and Wildlife Conservation Commission’s Florida Marine Research Institute. The 1999 Florida Legislature provided funds for studies of native sturgeon. The program funding announcement indicates that studies must be designed to benefit and advance both Florida sturgeon aquaculture and sturgeon conservation. Total funding of approximately \$450,000 was available as of July 1999. Funds must be expended/obligated by December 15, 2000. These studies must be designed to be completed within 12-18 month time frames. Any continued funding for this program is dependent upon an annual appropriation by the Florida Legislature. Eleven sturgeon research proposals were funded. Total funding by agency:

University of Florida	\$307,445
Department of Environmental Protection	\$ 33,797
Department of Agriculture & Consumer Services	\$ 25,000
U.S. Fish and Wildlife Service	\$ 59,000
Gulf Coast Research Laboratory	<u>\$ 24,758</u>
TOTAL	\$450,000

### **Status on Gulf Striped Bass Workshop Summary**

The Subcommittee was provided a draft of the Gulf of Mexico Striped Bass Restoration Workshop Summary. Lukens indicated that it is a rough first draft, and a complete edit of the entire document will be completed for Subcommittee review. Subcommittee members who gave presentations at the workshop were encouraged to review their individual presentations in the draft.

### **Other Business**

D. Frugé reported on a recent meeting with Don Jackson from Mississippi State University regarding the Bouie River as a potential site for a reservoir. The Bouie River area has been mined for gravel for about 50 years, creating some large, deep holes. A group in the Hattiesburg, Mississippi area is interested in general restoration of the area and has gotten cooperation from the gravel mine operator who is still operating there. Along with the restoration, the group is trying to create some additional water supply to both Hattiesburg and Camp Shelby by establishing 2 small reservoirs. One of these proposals would inundate the only known spawning area for Gulf sturgeon. At this point the proposal is in the conceptual stage. Over the next year they plan to come up with some concrete proposals on what they want to do. Depending on what they decide to propose, the Subcommittee may want to take some action. Frugé agreed to keep the Subcommittee aware of the actions of this group.

C. Mesing showed the video "Underwater Surveys of Chipola River, Summer 1999," which was discussed earlier under his state report.

### **Election of Officers**

Doug Frugé was elected Chairman of the Anadromous Fish Subcommittee. Charles Mesing will serve as Vice-Chairman.

**There being no further business, the meeting adjourned at 3:00 pm**

**TCC HABITAT SUBCOMMITTEE  
MINUTES  
Monday, October 18, 1999  
Biloxi, Mississippi**

The meeting was called to order by Chairman Dale Shively at 8:30 a.m. The following members and others were present:

**Members**

Frank Courtney, FFWCC, St. Petersburg, FL  
Phil Steele, FFWCC, St. Petersburg, FL  
Glenn Thomas, LDWF, Baton Rouge, LA  
Paul Cook, LDWF, Baton Rouge, LA  
Bob Spain, TPWD, Austin, TX  
Dale Shively, TPWD, Austin, TX  
Doug Frugé, USFWS, Ocean Springs, MS (*Proxy for Larry Goldman*)  
Leslie Turney, ADEM, Mobile, AL  
Dave Ruple, Nature Conservancy, Grand Bay, AL  
Jan Boyd, MDMR, Biloxi, MS

**Staff**

Jeff Rester, Habitat Program Coordinator, Ocean Springs, MS  
Cheryl Noble, Staff Assistant, Ocean Springs, MS  
Ron Lukens, Assistant Director, Ocean Springs, MS

**Others**

Robin Bruckner, NMFS Office of Habitat Conservation, Silver Spring, MD  
Tom Catheart, Mississippi State University, Starkville, MS  
Tom McIlwain, NMFS, Pascagoula, MS

**Adoption of Agenda**

The agenda was adopted as written.

**Adoption of Minutes**

The minutes of March 15, 1999 were adopted without changes.

**Administrative Report**

J. Rester stated that in April, the Protecting Fish Habitat brochures were printed and distributed to each state. Also in April, he started working on the Fishing Impacts Annotated Bibliography. The Gulf Council is currently being sued over the fishing impacts section of the EFH Amendment. In September, he attended a meeting of the NMFS, EFH Coordinators, and Council Habitat Personnel to discuss the lessons learned from designating EFH. The Texas, the Louisiana/Mississippi, and the Florida/Alabama Habitat Protection Advisory Panels of the Council met in September to review the Council's Habitat Policies and Procedures and other projects affecting habitat in the Gulf of Mexico. In October, he attended a meeting with NMFS and Council personnel to discuss the AP's comments on the Council's Habitat Policies and Procedures.

## **Community-Based Habitat Work**

R. Lukens stated that he would like to see local communities get involved in protecting habitat in each state. Oregon and Illinois have established community based watershed management programs. The Fishable Waters Act would take these community based watershed management programs and make them federal in nature. This would provide federal money to help set up local community based habitat protection and restoration.

R. Bruckner gave a presentation on the NMFS community based restoration program. This program began in 1996 and 75 projects have been funded so far. This program partners different organizations and they restore habitat at the community level. To date, 28 coastal projects have been funded from Florida to Alaska. Project proposals are reviewed by NMFS technical staff and awards from the program are made on a competitive basis. The awards are usually \$10,000-50,000, but the total for the project is usually much more because there must be matching funds. R. Bruckner stated that not many projects have taken place in the Gulf region and she hopes that this will change in the future.

B. Spain asked what the match has to be. R. Bruckner responded that it could be supplies or salary. It does not have to be cash.

T. Catheart asked what their overhead amount was. R. Bruckner stated that they do not like to fund projects that have large amounts of overhead.

Next, T. Catheart gave a presentation on a small scale restoration project in Biloxi, Mississippi. This project involves changing an area around a storm drain on the beach to a more natural environment. The project was funded in 1995, and a pipe was broken half-way up the beach. Natural vegetation was planted around the pipe to filter water before it reached Mississippi Sound. More information about this project can be located at <http://abc.msstate.edu/csd/>. Natural beach processes have affected the site. The discharge area has been blocked several times due to sand build up. Sand moved into the site after heavy rains and buried plants. Hurricane Georges did not really affect the site, but the clean up crews cleaning the beach basically leveled the site. This area has generated interest from local citizens who support the project and feel that it is an oasis of habitat in an otherwise barren beach area. T. Catheart stated that eventually they would like to plant emergent vegetation out in front of the outflow to help further clean the water before it is discharged into Mississippi Sound. He would also like to obtain funds to do more monitoring of the site to see how this site affects the surrounding environment.

## **Discussion of Diseases from Seafood Processing Facilities**

T. McIlwain gave a presentation on shrimp viruses and their possible spread to wild populations of shrimp. He stated that all known shrimp viruses have originated in wild populations and were then introduced into aquaculture facilities where they have the ability to become magnified. T. McIlwain stated that he is a member of the Joint Subcommittee on Aquaculture (JSA) and they are heavily involved in the virus problem. Several workshops and meetings have been held to discuss the virus issue and ways that viruses can infect wild shrimp stocks. He stated that the JSA has completed a risk assessment for viruses and determined that the risk of spreading viral infections to wild stocks in the Gulf of Mexico and South Atlantic is low, but there is high uncertainty.

T. McIlwain stated there are several ways viruses can reach wild stocks. They include waste water from processors, ballast water discharge from ships, the aquarium trade, imported bait shrimp, and birds. Problems arise when infected foreign shrimp are imported to the US to be processed. Some processors are treating their waste water, others are not. If the shells are discarded in landfills, there is the possibility that birds can transport the active viruses back to wild stocks. The aquarium trade can infect wild shrimp because



some viruses are known to infect other crustaceans. These other crustaceans have the ability to spread the virus.

T. McIlwain stated that there is ongoing monitoring for shrimp viruses in wild stocks. Shrimp samples are taken from SEAMAP cruises and checked for viruses. This sampling takes place from Brownsville, Texas to Pensacola, Florida. The results of this monitoring have not been completed yet.

T. McIlwain stated that a report is due soon that evaluates the risk of exotic viruses to wild shrimp populations. The Subcommittee decided to delay action on this issue until the results of this report are completed. T. McIlwain stated that the results should be completed in the next couple of months and this issue could then be discussed more fully at the next meeting.

### **Review of the Habitat Section of the Menhaden FMP**

J. Rester stated that one of the functions of the Habitat Subcommittee is reviewing the habitat sections for all Commission FMPs. The Menhaden FMP is currently being revised and this includes the habitat section of that FMP. The Menhaden FMP was distributed to members before the meeting, and J. Rester asked if anyone had any comments on the habitat section. He stated that the beginning of the habitat section is general to all FMP habitat sections and describes habitat throughout the Gulf of Mexico. The rest of the section deals with habitat that is specific to that particular species.

P. Cook questioned where the numbers for the Table 4-1 came from. These numbers disagree with the numbers that are used in the text of Section 4.2.4. There were also some consistency errors in the different sections when using different sources for acreages of salt marsh. The Subcommittee felt that this should be corrected and one source should be picked and then used consistently throughout the habitat section.

G. Thomas stated that large numbers of juvenile menhaden are located even in freshwater rivers, but there is not a lot of data on this. He stated he would look for any information he could find on this and send it to Steve VanderKooy. He also stated that he would provide data on seagrass acreage around the Chandeleur Islands.

The Subcommittee felt that the information presented in the second paragraph of Section 4.2.3 is confusing. This needs to be clarified. Steve VanderKooy stated that he appreciated the comments and if anyone could provide updated information that he would be happy to use it. He would like for the habitat sections of all FMPs to be as up to date as possible.

### **Summary of Aquaculture Programs by State**

J. Rester presented the updated Summary of Aquaculture Programs by State. He stated that corrections have been made to the document since the March meeting. He also stated that the document has been updated to reflect changes that have taken place over the summer. P. Cook reviewed the Louisiana section and stated that on page 9, under the Louisiana law section, that statute 356 should read private and not public. Also, on statute 312, it should read public and not private. These were the only changes made to the document. J. Rester stated that the TCC had tabled action on the document until this meeting, and they would be looking at the document on Thursday. If changes occurred, J. Rester stated that he would provide Subcommittee members with an updated copy of the document.

### **Update on the Fish Habitat Poster**

D. Shively distributed the draft habitat poster and language to everyone. The Subcommittee felt that a few more species should be added to the poster. These species were stone crabs, sturgeon, menhaden, alligators, brown pelicans, and striped bass. They also felt that the position of coral reefs should be moved to the area

off south Florida and that mangroves should be closer to central Florida. The manatee needs to be closer to Florida and red snapper should be off of Alabama. The Subcommittee felt that the poster does not talk about fish. It needs to talk about fish and the value of fish to all Gulf states. Without habitat there are not any fish. This needs to be stressed. P. Steele stated that he would send new language for Florida to J. Rester. J. Rester stated that he would try to revise the current language for the poster and make it stress the value of fish and habitat. Everyone agreed that the poster was a good first start and they were looking forward to seeing the next version.

### **Identification and Acquisition of Irreplaceable Habitat Throughout the Gulf of Mexico**

J. Rester stated that no one sent any information to him concerning this issue after it was discussed at the last meeting. He checked with some of the suggested contacts and they were dealing more with land that had already been acquired like national wildlife refuges, state protections areas, and private conservation areas. J. Rester stated that the intent of this project was to identify areas that were privately owned and contained irreplaceable habitat. He would like to identify these areas and then let other agencies and conservation groups work to acquire these areas and protect them. He again gave the example of the north side of Grand Isle, Louisiana and Deer Island off Mississippi. J. Boyd stated that Cat Island off Mississippi is currently being acquired by the National Park Service to be included in the Gulf Islands National Seashore. P. Steele stated that he had some information that he did not send in, and he would give this to J. Rester. It was also suggested that J. Rester check with the habitat protection division in each state. NMFS, USFWS, the Gulf of Mexico Program, and the Nature Conservancy could also be possible contacts that could provide information on this topic. J. Rester stated that he would check with these organizations and develop something for the next meeting.

### **Fishing Impacts Annotated Bibliography**

J. Rester reported that the annotated bibliography is still being worked on. Right now, the bibliography contains around 225 papers and citations for 225 more papers that he has not found yet. In a September meeting with NMFS, EFH Coordinators, and regional Council habitat contacts, J. Rester stated that NMFS Headquarters officials became interested in the project and offered \$4,000 for further research and printing costs. The bibliography should be completed around the first of the year. The bibliography will also be available on the Internet.

### **Election of Chairman**

D. Shively was again elected Chairman.

### **Other Business**

J. Rester asked about future agenda items. P. Steele stated that there is a growing concern about fishing impacts to habitat and this is something the Subcommittee could discuss. G. Thomas stated that he could give an update on the fishery monitoring on the large freshwater diversions in Louisiana.

**With no other business, the meeting adjourned at 12:00 p.m.**

**JOINT COMMERCIAL/RECREATIONAL FISHERIES ADVISORY PANEL  
MINUTES  
Monday, October 18, 1999  
Biloxi, Mississippi**

Philip Horn called the meeting to order at 8:40 a.m. with the following in attendance:

**Members**

Philip Horn, Clark Seafood, Pascagoula, MS  
Bob Zales, II, Panama City Boatman Association, Panama City, FL  
Scott Riley, Tallahassee, FL  
Pete Barber, AL Seafood Association, Bayou La Batre, AL  
Bob Fairbank, Gulfport, MS  
Randy Gros, Marrero, LA  
Pat Murray, CCA, Houston, TX

**Staff**

Larry B. Simpson, Executive Director, Ocean Springs, MS  
Ron Lukens, Assistant Director, Ocean Springs, MS  
David Donaldson, Data Program Manager, Ocean Springs, MS  
Steve VanderKooy, IJF Program Coordinator, Ocean Springs, MS  
Cindy Yocom, Staff Assistant, Ocean Springs, MS

**Others**

Jim Twiggs, MS Charter Boat Captains Association, Biloxi, MS  
George Sekul, GSMFC Commissioner, Biloxi, MS  
Michael Bailey, NMFS, St. Petersburg, FL  
Kim Dawson, NMFS, Pascagoula, MS  
Walter Keithly, LSU, Baton Rouge, LA  
Judy Jamison, Gulf and South Atlantic Fisheries Development Foundation, Tampa, FL  
Steve Winters, NMFS, Pascagoula, MS  
Richard Bennet, MMS, New Orleans, LA  
Rene Labadens, Jr. NMFS, Pascagoula, MS  
John Tennyson, NMFS, Pascagoula, MS  
Brian Perkins, Auburn Marine Center, Mobile, AL  
Ginny Vail, FL FWC, Tallahassee, FL  
Bob Cooke, USFWS, Atlanta, GA  
Patrick Burchfield, Gladys Porter Zoo, Brownsville, TX  
Felicia Coleman, FSU, Tallahassee, FL

**Adoption of Agenda**

**R. Gros moved that the agenda be adopted; the motion was seconded and passed unanimously.**

**Introductions**

P. Horn started the introduction of the panel and audience.

### **Approval of Minutes (March 15, 1999)**

**R. Gros moved to accept the minutes, P. Murray seconded, and the minutes were accepted as written.**

### **Ranch Nuevo and the Kemp's Ridley Sea Turtle, A Program that Works**

Patrick Burchfield, director of the Gladys Porter Zoo in Brownsville, Texas, brought the Panel up-to-date on the efforts to recover the Kemp's Ridley sea turtles, an endangered species, in the Gulf of Mexico. Burchfield, working in conjunction with the Mexican government and volunteers from all over the world, has managed to build a very successful recovery program along most of the Mexican coastline.

Rancho Nuevo is a site on the Gulf coast of central Mexico, 240 miles south of Brownsville, Texas, where historically the Kemp's Ridley sea turtles nest. The location was discovered over 50 years ago by a civil engineer from Tamaulipas, Mexico by recruiting pilot friends to fly over the area. Over 40,000 nesting sea turtles were filmed on one day, but the film remained unknown to scientists until 1961. In the next 30 years, the nesting population fell to 4,000 - 5,000. Since the re-discovery of the film by Dr. Henry Hildebrande in 1961, the goal has been to protect the turtle's nests from all predators, which include skunks, coyotes, badgers, birds, flies, and man. One myth which contributed to the decline in the Kemp's Ridley population was that the eggs had aphrodisiac qualities. Because of the high demand for eggs, locals raided every nest, shipping millions of eggs into the larger Mexican cities.

In 1961, Daryl Adams, a building contractor from Brownsville, witnessed locals in the area of Rancho Nuevo loading hundreds of bags of turtle eggs onto trucks to be shipped inland. Adams went to Mexico City and convinced the Secretary of Fisheries to give him a permit to move 2,000 eggs to South Padre Island in an attempt to imprint the hatchlings to Texas beaches. For the first several years, the eggs did not hatch due to the handling and transportation to Texas. Eventually, they flew the eggs to Texas and succeeded in hatching over 1,100 of the 2,000 eggs. Since the Rancho Nuevo project began in 1978, efforts during nesting season to translocate the eggs to protected enclosures have succeeded in increasing the Kemp's Ridley population. In 1999, over 3,600 nests were protected, and 226,000 hatchlings were released from the project's four locations. Part of the success comes from the cooperation with National Fisheries Institute and the Texas Shrimp Association and their continuing efforts to conserve the Kemp's Ridley through partnership with the Mexican scientists and staff.

Unfortunately, the Rancho Nuevo project has encountered budget problems over the last few years, operating on what little money could be generated. Burchfield pointed out that thanks, in part, to efforts by the Commission, the USFWS was able to bail out the program for the last month of turtle nesting this past summer. With the ever growing concern over endangered species and bycatch in the Gulf of Mexico region, a successful program like the Mexican Kemp's Ridley recovery effort needs the support of both fishing and non-fishing groups. The Kemp's Ridley species is the strongest it has been in almost 40 years, thanks to the efforts of dedicated scientists and volunteers willing to endure truly primitive working and living conditions to save a turtle.

A brief discussion followed with questions from the Panel. It was pointed out by both Burchfield and the Panel that the original decline in the species resulted from Mexican entrepreneurs harvesting almost 100% of the eggs. It wasn't until the turtle population had reached a critically low level that the tertiary mortalities by the fishing sectors began to be noticed.

### **Marine Refuges and Sanctuaries Panel Discussion**

At the previous meeting of the Commercial/Recreational Fishery Advisory Panel it was suggested that a series of speakers could be brought together to shed some light on the marine reserves issue. Drs. Steve Thomas, Felicia Coleman, and Walter Keithly provided three perspectives on the issue. All three

presentations, too lengthy to present in these minutes, are available from the Commission office. Below are summaries of the presentations.

Discussion of Marine Reserve Workshops - S. Thomas presented the results from the Council's public workshops conducted around the Gulf. A series of ten workshops were conducted from Brownsville, Texas to Key West, Florida in August of 1999. The purpose of the workshops was twofold; to provide information on the marine reserve concept, and determine the critical issues and concerns of individuals who will be impacted by reserves in the Gulf of Mexico. The workshops attempted to identify the appropriate uses of marine reserves, the criteria considered when establishing a reserve, and the problems or issues that might arise once a reserve is developed.

Thomas highlighted the major response categories resulting from the statements given by the public at the ten workshops. Under the appropriate uses, the top three responses included facilitating research, protecting habitat, and protecting spawning groups. Based on the public comment, the criteria for establishing a reserve should include identification of and inclusion of the critical habitat for a species, mitigation for those impacted, and an ability to enforce such a reserve. The three most commonly identified problems include enforcement issues, user group impacts, and credibility of policy makers.

Benefits of Marine Reserves - F. Coleman offered a proponents view of the reserve issue. Coleman began by citing the current situation in Florida regarding grouper. She highlighted several management strategies currently employed in various fisheries in the Gulf of Mexico and addressed some of the problems with those management tools. Open access fishing includes two types of restrictions, direct and indirect. Direct restrictions are typically related to gear (i.e., TEDs, BRDs, or prohibitions). Problems associated with direct restriction are economic inefficiencies, no participation control, and increased efficiency in unregulated characteristics. Indirect restrictions include catch quotas, seasonal and areal closures, bag limits, size and trip limits. Each of these has its own suite of problems. The main concern with both approaches to open access fishing is the failure to reduce effort. The alternative management tool is limited access fishing.

Coleman continued by highlighting the problems associated with limited access through license limitation, catch rights, territorial use rights, and sole ownership, all of which set the stage for marine sanctuaries and reserves. With the recent push to identify essential fish habitat (EFH) through the reauthorization of the Magnuson-Stevens Act, reserves are appropriate based on the EFH provisions. Marine reserves serve to protect habitat, protect biodiversity, protect community structure and function, protect spawning stock biomass, protect intraspecific genetic diversity, restore population age structure, and enhance recruitment. Coleman used the *Oculina* coral reserve as an example of a successful marine reserve. Coleman does point out a few of the limitations to establishment of marine reserves which include, the small size of most sanctuaries, the activities taking place inside and outside proposed sanctuary boundaries, and the extreme resistance by special interests near proposed reserves.

Problems with the Marine Reserve Concept - W. Keithly brought an economic approach to the problems and myths of reserves. Keithly pointed out in his presentation that while good in theory, there is very little detail in the biological literature regarding the actual results of such a reserve. Economic benefits associated with the establishment of marine reserves include the value of simply protecting "nature," allowing individuals to "keep their future options open," the value of biodiversity, and the value of the "spillover" effect of potential increased harvest outside the reserve. However, the costs associated with marine reserves may not be so esoteric. Significant issues to be considered include the cost of displaced fishermen, the potential loss of consumer surplus, the increased crowding by displaced individuals on opened fishing grounds, the negative impact to habitat and stocks in those opened fishing grounds, and the costs associated with implementing and enforcing marine reserves.

Keithly raised several questions based on an economic theoretical modeling of marine reserves which considered migration rate of fish, the cost of fishing, the size of the marine reserve, and the fishing industry

structure in place at the time. Keithly draws several conclusions. First, little is gained by establishing marine reserves without applying some measures that constrain fishing capacity and effort. Second, any significant migration of fish ensures that the fish stock in the protected area would be depleted despite the existence of a marine reserve. Third, catch may increase outside the reserve but the gain would be nullified by the increasing fishing costs. Forth, the reserves might have to be 70-80% of the entire fishing area in order to achieve yield and conservation effects on par with an optimally controlled fishery; however, this would erode the economic benefits without effort and capacity controls. Finally, the establishment of marine reserves without consideration of effort and capacity may do little other than increase cost.

### **FIN Activities Update**

D. Donaldson addressed a FIN issue regarding federal fishing area codes currently used on the fishing logs and Florida trip tickets and the need for more flexibility in achieving more accurate information on fishing locations. The current NMFS grid system does not provide the resolution required to accurately characterize fishing activities. Several options for reporting location were offered and discussion followed. The FIN committee would like to see the location changed to latitude and longitude for reporting purposes. The Panel pointed out that a problem may arise with confidentiality. Fishermen were not likely to report exact locations and additional problems exist for individuals fishing over multiple days in multiple locations.

Donaldson stressed that the fishermen could simply report degrees and minutes if confidentiality was an issue. The Panel unanimously agreed that the FIN committee should change the coding structure, keeping it as simple as possible to understand, but still collect the information needed to make management decisions.

### **Status of Fishery Management Plans**

S. VanderKooy updated the Panel on the status of the fishery management plans currently in review and development. The seatrout and flounder FMPs are still in review by the Technical Coordinating Committee (TCC), and it is hoped that they will be moved forward at the current meeting or soon after. The blue crab revision is temporarily on hold. The stock assessment needs to be reworked before the TCC can continue the review process. New drafts should be available by the March meeting.

### **Limited Entry in the For-Hire Sector**

A discussion was led by B. Zales regarding limited entry in the "for-hire" industry. This issue was addressed by the Gulf of Mexico Fishery Management Council in January of 1998 as a possible way of limiting the recreational red snapper catch. It was suggested at that time, by Zales, that the Council consider dealing with all the federally managed species at once (i.e. mackerels and reef fish). In September 1998, an options paper was presented to go forward with a limited entry plan. Qualifications for the charter permits had to be proven prior to a control date, after which a permit will not be guaranteed. The guide licenses issued in Florida have increased greatly in the last several years; however, most of the guides do not fish beyond Florida's nine-mile limit and are not affected by federal regulations. These guides can catch mackerels and snappers in state waters, which are counted against the entire allocation for the Gulf of Mexico. Therefore, any limited entry program should cover state and federal waters. Several charterboat associations raised this issue before the Florida Fish and Wildlife Conservation Commission and asked the state to consider requiring recreational for-hire boats in state waters to possess federal for-hire permits, regardless of water body. Commercial fishermen are already under this requirement. In addition, limited entry in the for-hire sector may lead to consideration of a limited entry approach for private recreational fishermen. For instance, a red snapper stamp could be required to slow the expansion in this sector. The charter boat associations are working hard to develop a plan to present to the Council. The for-hire industry would rather help in the development of a limited entry program than have one handed down to them. Zales and the charter boat associations would like to see the GSMFC coordinate the states to get something started at that level. If the states don't do something in conjunction with the federal plan, the fishery will continue to expand in state waters.

It was suggested that since the Council was already working on a plan to implement limited entry in federal waters, the Panel should bring the issue to the GSMFC. **B. Zales made the following motion:**

**The Commercial and Recreational Fisheries Advisory Panel recommends that the GSMFC proceed with coordinating the states in developing a limited entry plan for the for-hire industry and a stamp system for the recreational fisherman.**

**The motion was seconded by P. Barber.** Discussion about the time issue followed. The Council is already moving in this direction so the process should begin soon. It was pointed out that there would be an incentive to be able to extend the season longer but the proposed moratorium raises some potential problems. This would be a marine license issue, not inland waters or freshwater. The purpose of these measures although political, are also conservation based. P. Murray was concerned that endorsing this motion would endorse the background economic incentives, not the conservation incentives. B. Fairbank suggested removing the language about a stamp system for the recreational sector and limit the scope of the motion to only reef fish and mackerels in the for-hire sector. **The following alternative motion was suggested:**

**The Commercial and Recreational Fisheries Advisory Panel recommends that the GSMFC begin the development of a limited entry program for the "for-hire" industry and the recreational fishery. This should be a coordinated state effort through the GSMFC, and limit the scope to reef fish and mackerel.**

**The alternative motion was seconded by B. Zales and was accepted, although not unanimously. P. Murray and R. Gros asked that the record reflect that they opposed the motion.**

#### **Break-out Session**

It was decided to amend the agenda and not break-out into individual panels, because the previous discussion had included the update on limited entry from the recreational panels break-out, and because of an interest in continuing the dialog between both panels. It was suggested by P. Murray and P. Horn that in the future, issues exclusive to one group could be handled in an *ad hoc* meeting and that a break-out was probably not necessary under normal circumstances. Should the need arise for a break-out, staff could make the arrangements prior to the meeting, provided they are forewarned of the issue.

R. Lukens indicated that as a follow-up to the limited entry issue from the last meeting, Lukens e-mailed a fisheries bulletin board and solicited opinions from a larger group of scientists and managers and summarized the responses in the handout. Copies of the e-mail responses are available at the Commission office.

#### **FDA and the Alabama Crab Processors**

Brian Perkins of Auburn University Extension and Research Center and P. Barber informed the Panel of a situation with Alabama crab processors and the FDA (Attachment 1). Two years ago the processors worked with the FDA to develop Hazard Analysis - Critical Control Point plans (HACCPs) for each processing plant to improve food-safety and minimize the potential for contamination based on particular species which may pose some threat due to improper handling. The processors agreed to the plans knowing they would have to monitor certain conditions and maintain records to document compliance with the plans. Under HACCP, the processor is responsible to prove compliance with the plans when FDA inspectors check the facilities. However, the FDA regulatory officials have allegedly been unfairly inspecting plants using the guidance document to inspect, not the approved regulatory HACCPs. The Alabama processors are addressing this issue with the FDA and have been granted a hearing. As a result, the crab processors would like to see the Commission develop a committee or panel, similar to the Interstate Shellfish Sanitation Conference (ISSC) to bring all concerned parties together in a common forum and represent the crab processors. The purpose

of the panel would be to provide an ongoing forum between the crab processing industry and regulatory agencies.

A quorum for the Commercial/Recreational Fishery Advisory Panel could no longer be met unless the rules were suspended. Therefore the Commercial panel, which had a quorum, addressed the issue. **P. Barber proposed the following motion:**

**The Commercial Fisheries Advisory Panel suggests that the Commission explore the development of an entity like the ISSC to provide coordination between state and federal regulators and the blue crab processing industry.**

**The motion was seconded by P. Horn, and the motion was approved without objection.**

#### **Marine Reserves - Continued Discussion**

P. Horn recounted the marine reserve presentations from earlier in the day. L. Simpson updated the Panel on the status of marine reserves dealing with gag groupers. B. Zales pointed out that two separate reserves exist. At the last minute of the Council meeting at which the recommendation was endorsed, someone added a clause to encompass the entire water column after the comment period. The disagreement is whether the reserve was intended to protect one species in the reserve or all the species. B. Zales indicated that based on the Council's discussion, the inclusion of the bottom was acceptable but that the upper waters were never addressed until the very end, after the comment period. B. Zales indicated that had Keithly's report been included with the Council's scoping document, much greater discussion would have resulted at the Council level.

#### **Other Business**

**There being no further business the meeting adjourned at 5:06 p.m.**



**PROBLEMS RELATED TO FDA'S ENFORCEMENT  
OF 21 CFR PART 123,  
"Procedures for the Safe and Sanitary Processing and Importing  
of Fish and Fishery Products; Final Rule"**

The FDA Rule cited above became effective on December 18, 1997. Just five pages in length, it was written in a reasonably broad manner to take into account the fact that, on any given day, three hundred distinct seafood species may be offered for sale in the U.S. The Rule also acknowledges the fact that no two facilities that process the same species are operated exactly the same.

The Rule intends for all seafood processors and importers to accomplish several tasks. First, a Hazard Analysis must be conducted to determine if there is a reasonable likelihood that there are any significant hazards, either inherent in the species themselves or which may be introduced during processing. If one or more hazards are identified, then a HACCP Plan must be developed and processing operations must be conducted according to it. (HACCP, pronounced "hassup", is the acronym for the Hazard Analysis – Critical Control Point method of food safety control that was pioneered by the Pillsbury Corporation to provide the manned space flight program with safe foods.)

The HACCP Plan has to include several key components. Processors must develop Critical Limits that will prevent, eliminate, or reduce to an acceptable level the occurrence of a food-safety hazard. They must also conduct a planned sequence of observations or measurements (i.e., monitor their Critical Limits) to assess whether plant operations related to the safety of the product are under control and to produce an accurate record for future use in verification. There are other steps such as Corrective Actions and Verification that must also be part of the HACCP Plan, but the previously described steps are the plan's "backbone".

During inspections of Alabama Blue Crab firms to note compliance with 21 CFR Part 123, FDA investigators have on numerous occasions: 1) Exceeded the specific provisions of 21 CFR Part 123; 2) Made outright mistakes; and, 3) Made extremely subjective judgement calls about supplies, equipment, and records.

FDA exceeded the specific provisions of 21 CFR Part 123 by:

- Insisting that Alabama Blue Crab processors operate according to an FDA HACCP model intended to control for two bacteria (*Bacillus cereus* and *Clostridium perfringens*) that historically have never been associated with Gulf Coast Blue Crab meat. [According to an FDA internal e-mail sent from the Mobile Resident Post to the Nashville District Office, "FDA will not consider changing their guidelines..." pertaining to Gulf Coast Blue Crab Meat even though "...there is no history of illnesses in seafood from these organisms, (and) they are not of great concern at this time..."]
- Denying processors the right to use such items as experience, human illness data, or a history of satisfactory finished product sample results to make decisions about what connote significant hazards and how to control them.

[21 CFR Part 123.6 (a) states that prudent processors will establish controls for food-safety hazards that are reasonably likely to occur "...because experience, illness data, scientific reports or other information provide a basis to conclude that there is a reasonable probability that it will occur in the particular type of fish or fishery product being processed in the absence of those controls."]

- Unnecessarily citing Alabama Blue Crab processors during inspections for such infractions as "No HACCP trained individual is employed by the firm," and "On many occasions, the operator was reviewing his/her own work." [Neither situation is specifically mentioned in and, therefore, is not specifically prohibited by 21 CFR Part 123.]

Following are some of the outright mistakes FDA made:

- Cited one processor because, "The floor in the cooking/backing room is cracked and difficult to sanitize." [While 21 CFR Part 110.35 (d) (2) requires that "...all food-contact surfaces shall be cleaned and sanitized before use..." this requirement does not include floors or other non-food-contact surfaces.]
- During one inspection, the FDA investigator wrote that, "Written HACCP Plans prepared for the firm are not species specific..." In the very next observation the investigator wrote, "No HACCP Plan has been implemented by the firm, nor could the plans be readily located..." [It is most frequently the case that FDA investigators cite processors for either infraction, but not both!]
- An FDA investigator cited a processor because, "The firm was missing sanitation records for several days production." [It turns out that the firm was not in operation on the days for which FDA cited them.]

Some of the extremely subjective judgement calls made by FDA during HACCP inspections follow:

- Numerous Blue Crab processors have been cited for using, "...knives with grooved handles..." which the FDA states are "...difficult to clean and sanitize..." [A significant percentage of Alabama Blue Crab processing plant line workers who pick crab meat use Sani-Safe® Model S-107 knives with textured polypropylene handles. These knives are National Sanitation Foundation approved for use in any U.S. food service or processing operation.]
- During one inspection, the FDA investigator became frustrated with the monitoring plant's monitoring records and exclaimed, "You're not using our forms." [21 CFR Part 123 does not require any processor to use any record developed or distributed by the FDA.]
- One FDA investigator noted that, "The picking and packing employees only dipped their hands and/or gloved hands in a sink of soapy water, with little washing action, prior to sanitizing and handling the crabmeat." [Is the inspector accusing the workers of failure to wash and sanitize? If so, it should be a simple matter to state such and minimize such vague inferences.]

These are but a limited number of examples of the kinds of problems that Alabama seafood processors have had to endure at the hands of the FDA.

## IMPORTANT FDA NAMES AND ADDRESSES

Mr. Don Kraemer  
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Mr. Raymond K. Hedblad  
District Director  
U.S. Food & Drug Administration  
Nashville District Office  
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Mr. Howard E. Lewis, Director  
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Mr. Robert W. Becker, Jr.  
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\* \* \*

## IMPORTANT NON-FDA NAMES AND ADDRESSES

Dr. Lewis Byrd  
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Mr. Brian E. Perkins  
Extension Seafood Technologist  
Auburn University  
Marine Extension and Research Center  
4170 Commanders Dr.  
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Tel: 334/438-5690

Mr. Pete Barber, President  
Alabama Seafood Association  
P.O. Box 63  
Codon, AL 36523  
Tel: 334/415-6870

**TCC SEAMAP-GULF SUBCOMMITTEE  
 MINUTES  
 Monday, October 18, 1999  
 Biloxi, Mississippi**

Chairman Richard Waller called the meeting to order at 1:07 p.m. The following members and others were present:

**Members**

Richard Waller, USM/IMS/GCRL, Ocean Springs, MS  
 Mark Leiby, FFWCC/FMRI, St. Petersburg, FL  
 Jim Hanifen, LDWF, Baton Rouge, LA  
 Terry Cody, TPWD, Rockport, TX

**Staff**

Larry Simpson, Executive Director, Ocean Springs, MS  
 Ron Lukens, Assistant Director, Ocean Springs, MS  
 Dave Donaldson, Data Program Manager, Ocean Springs, MS  
 Jeff Rester, SEAMAP/Habitat Program Coordinator, Ocean Springs, MS  
 Cheryl Noble, Staff Assistant, Ocean Springs, MS  
 Joe Ferrer, Systems Administrator, Ocean Springs, MS

**Others**

Scott Nichols, NMFS, Pascagoula, MS  
 Mark McDuff, NMFS, Pascagoula, MS  
 Mara Booth-Miller, USCG, Miami, FL  
 William Hogarth, NMFS, St. Petersburg, FL

J. Rester asked all Subcommittee members to sign the letter of recognition to Ken Savastano.

**Adoption of Agenda**

The agenda was adopted as submitted.

**Approval of Minutes**

J. Hanifen asked to change the time the Subcommittee adjourned to 11:25 a.m. instead of p.m. **J. Hanifen moved to approve the August 5, 1999 minutes with this change. T. Cody seconded the motion and it passed unanimously.**

**Administrative Report**

J. Rester reported that R. Lukens, D. Donaldson, M. McDuff, S. Nichols and he met to discuss the SEAMAP database and the GSMFC taking over the management responsibilities. He said this will be discussed under agenda Item 9.

The annual report was completed in August and mailed to the appropriate personnel at NMFS.

The 1998 Atlas data has been received and will be compiled and completed around the first of the year.

The TCC report has been completed and copies are being distributed at this meeting.

The Fall Plankton Survey was completed in September and the Fall Groundfish Survey is underway.

### **Real Time Data Questionnaire**

J. Rester stated that at the last meeting the Subcommittee charged him with researching the cost to do a statistically valid questionnaire asking recipients if they feel the SEAMAP real time data is useful and if they would like to continue receiving it. He said it would cost approximately \$1.00 per sample. The total cost will be approximately \$3,000.00. After discussion, the Subcommittee decided to again contact the appropriate personnel at NMFS and GMFMC before they proceed with the questionnaire because even if the response is positive, they can not mail out the real time information without their approval. The Subcommittee asked L. Simpson if he will discuss this issue with Dr. Hogarth, the new NMFS Regional Administrator, to see if NMFS would be willing to start the real time data mail outs again next summer. L. Simpson said Dr. Hogarth is at this meeting and he will discuss it with him and J. Rester will inform the Subcommittee of his response.

### **Fall Red Snapper Real Time Data**

J. Rester said at the last meeting they discussed possibly doing a summer real time data red snapper mailing. After reviewing the data from last summer the Subcommittee decided there was not enough data to do a summer mailing but they will still do the winter red snapper real time data mail out. J. Rester asked the Subcommittee to get their data in as soon as possible and they will mail the information in early December.

### **SEAMAP Data Web Page Development**

R. Waller said that at the August meeting the Subcommittee suggested the chairmen of each SEAMAP component send a letter to Dr. John McGowan, the Chief Technology Officer at USM, stressing the importance of the development of the SEAMAP Web Page to access SEAMAP data. He said this was done and Ms. Sherry Rawls responded by saying that they will do this as soon as possible and she reminded him that they were not charging SEAMAP to do this. He said that he will be meeting with Ms. Rawls and other personnel that will be working on this within a month and he will keep the Subcommittee informed on the progress. He also asked M. McDuff to preview the current GSMFC web page and give any input he thinks will be useful.

### **Data Coordinating Work Group Report**

M. McDuff distributed the Data Coordinating Work Group report and reviewed the current database and ORACLE database. Processing of the SEAMAP 1998 data is almost complete (one Alabama cruise has not been completed) and data processing of the 1999 data and 1982-1987 Gulf data is in progress; processing of the 1998 atlas is in progress; 231 SEAMAP requests have been received to date and all but two requests have been completed; approximately 300 SEAMAP cruises have been data based in the ORACLE system and testing for data query and download functions for the ORACLE system are in progress and re-engineering of the main frame SEAMAP software to take advantage of the ORACLE database software is in its final stage; and the SEAMAP on-line data base now contains 462 cruises with a total of 2,908,467 records.

M. McDuff asked the Subcommittee if they would like to continue receiving the Data Management Reports that are distributed at these meetings or if they would prefer for them to be online only. The Subcommittee agreed that they only need the newest information and once the cruise information is complete, they will not need the information again.

S. Nichols gave a presentation on the SEAMAP Data Management problems (Attachment 1) and explained how they plan to resolve the problems and outlined what they expect the new system to do. He said he is

pleased with what they have accomplished so far and it should be completed by the first of the year. M. McDuff said he will send the Subcommittee a copy of the new gear codes with instructions on how to load them.

### **Status of GSMFC Proposal for Data Management**

J. Rester said that when the GSMFC originally proposed taking over the SEAMAP data management responsibilities, they did not realize the extent of the data management problems and decided that they are not ready to take this on at this time so they withdrew their proposal. J. Rester said GSMFC is still conceptually interested but it will probably be after the year 2000 after the new ORACLE person has their system up and running.

### **Election of Chairman**

**T. Cody moved to elect R. Waller Chairman and J. Hanifen Vice Chairman by acclamation. M. Leiby seconded and it passed unanimously.**

### **Other Business**

R. Waller said there has been more discussions about the biocodes and he asked M. Leiby to address this. M. Leiby said he put together a new 18 character biocode rather than the 9 character biocode and this allows them to use suborders, subfamilies, tribes, etc. He then explained the new biocodes and other things he is doing to the Subcommittee. He said an unofficial committee has been formed to develop a system of updating and keeping the documentation current. J. Shultz, H. Perry and M. Leiby are currently on the committee and M. Leiby will ask if the South Atlantic component would also like to appoint someone to the committee. T. Cody asked the Subcommittee about the name change for brown/white shrimp and asked if SEAMAP will adopt this. S. Nichols suggested that if the Subcommittee endorses this committee, the committee can review this issue and make a final decision to bring to the Subcommittee. **J. Hanifen moved to accept this committee to review the biocodes and name changes. T. Cody seconded and it passed unanimously.**

J. Hanifen informed the Subcommittee that they renewed their permit to have a turtle on their boats since they do not use TEDs. He said the old permits expired and suggested that the rest of the Subcommittee get their permits renewed. J. Hanifen will send a copy of his request to J. Rester and he will copy the information to the other members so that they can renew their permits.

R. Waller asked for a NEAMAP update and D. Donaldson said there is no funding yet and it's still in the planning stage.

In reference to the letter of request from Dr. Shipp asking for a red snapper stock assessment analysis with the state SEAMAP data, S. Nichols said his response was that he didn't have enough time to do this before the November meeting, but he will try to do this before the next round of stock assessments.

The Subcommittee asked J. Rester to arrange a conference call or to do a mail ballot for the Environmental Data Work Group to elect a leader. Once they elect a leader the Subcommittee must endorse their choice.

L. Simpson said that during the break he discussed the real time issue with Dr. Hogarth. Dr. Hogarth will study the issue and send a response as soon as possible. J. Rester will update the Subcommittee when he receives the information.

**There being no further business J. Hanifen moved to adjourn. T. Cody seconded and the motion passed unanimously. The meeting adjourned at 4:45 p.m.**

## **SEAMAP DM Problems**

- **Base did not support logic needed to use it**
- **Major logical errors in GLF & plankton**
- **Large overhead supporting legacies**
- **Table structure not ideal**
- **Inadequate editing model**
- **No support of 'higher level' information**

## **Conceptual Structure**

Survey Area

Stratum

Station

Events at Station

Samples from events

Analysis of samples

## Data Base Structure

- **Oracle Relational Database**
- **Add variables: STATION, EVENT**
- **Tables for**
  - Cruises
  - Stations
  - Events
- **Additional tables, variables at lower levels**
  - Entry in catches
  - Sample identifiers in environmental (new data only)
- **Maintain current field identifications**

## Tables

CATCHDETAILS  
CATCHES  
CONTACTS  
CRUISES  
ENVIRONMENTALPROFILES  
EVENTDETAILS  
EVENTS  
OTHERGEAREVENTS  
PLANKTONEVENTS  
PLANKTONSAMPLES  
SHRIMPLENGTHFREQUENCIES  
SHRIMPSAMPLES  
STATIONS  
TIMESERIES  
TRAWLEVENTS  
VISUALOBSERVATIONS  
WEATHEROBSERVATIONS



## Logical Errors

- **Length frequencies - YOY problem**
  - no variable for YOY in length frequency files
  - no entry from measuring boards
  - Butch Pellegrin working on correcting historical data
- **Plankton**
  - station numbers had been changed
  - could not match catch data back from Poland
  - Pasc, Archive Center untangling 1 cruise at time

## Oracle Views

- **Powerful data subsetting technique**
- **If pre-defined will be same for all users**
- **Restructure data from actual tables**
- **Could recreate past versions, if wanted**

## Oracle View to SAS

```
proc access dbms=oracle;
create work.ssstate.access;
user="userid";
orapw=*****;
path='@triton';
table=ss_statetrawls;
assign=no;
create work.ssstate.view;
select all;

data sqls.ssstate;
set ssstate;
```

## Creating a View

```
create view SS_STATETRAWLS as
SELECT CSV AS VESSEL, CSC AS CRUISE, STATION, EVENT, TSERIES, SOURCE, YEAR,
GEARTYPE, TRWLSIZE, OPCODE, STARTEV, ENDEV, TIMEZONE, STARTLAT, STARTLON,
ENDLAT, ENDLON, STARTWD, ENDWD, DEPUNITS, SPEED, DURATION, DISTANCE, SCS, PV,
SEAMAP, TOW, WHICHNET, STRATUM, WATE, ALDIST, DISTOFF, EVP AS PASC, COMTRWL
FROM
(SELECT CRUISES.VESSEL AS csv, CRUISES.CRUISE AS csc, YEAR, TSERIES, SOURCE
FROM CRUISES, TIMESERIES
WHERE CRUISES.VESSEL=TIMESERIES.VESSEL AND CRUISES.CRUISE=TIMESERIES.CRUISE
AND (TIMESERIES.TSERIES='SS' OR TIMESERIES.TSERIES='LS') AND SOURCE!='US'),
(SELECT EVENTS.VESSEL AS eVv, EVENTS.CRUISE AS eVc, EVENTS.STATION, EVENTS.EVENT, GEARTYPE,
TRWLSIZE, OPCODE,
STARTEV, ENDEV, TIMEZONE, STARTLAT, STARTLON, ENDLAT, ENDLON, STARTWD, ENDWD,
DEPUNITS, SPEED, DURATION, DISTANCE, SCS, PV, EVENTS.PASC AS EVP,
SEAMAP, TOW, WHICHNET, STRATUM, WATE, ALDIST, DISTOFF, COMTRWL
FROM EVENTS, TRAWLEVENTS
WHERE EVENTS.VESSEL=TRAWLEVENTS.VESSEL AND EVENTS.CRUISE=TRAWLEVENTS.CRUISE
AND EVENTS.EVENT=TRAWLEVENTS.EVENT)
WHERE CSV=EVV AND CSC=EVC;
```

## Higher Level

- **Cruises generally multipurpose**
- **Not all samples relevant to analysis**
  
- **Current system gave no guidance**
- **Nothing telling what cruises needed**
  
- **Add variables: e.g. Timeseries, Stratum**
- **Documentation**

## Still Needed

- **Data Entry System**
- **Editing & Auditing - greater capability**
- **Mirroring**
- **Access**
  - user software (choices?)
  - web based
- **Sample identification / analytical method**
- **Documentation**

October 15, 1999

## SEAMAP DATA MANAGEMENT

### A. Data Processing Status

Status reports for the 1982 through 1999 SEAMAP data are shown in Attachments 1-13. All cruise data in the SEAMAP on-line data base have been reformatted to SEAMAP versions 3.0, 3.1, 3.2 or 3.3. Processing of the SEAMAP 1998 data is complete. Data processing of the 1999 data and 1982-1987 Gulf data is in progress.

### B. Gulf Atlas Processing

Processing of the 1998 Atlas is in progress.

### C. Data Requests

Two hundred and thirty-one SEAMAP requests have been received to date. All but two requests have been completed.

### D. Software/System Progress

Re-engineering the main frame SEAMAP software in order to take advantage of the ORACLE data base software is in its final stage. Testing for data query and download functions are in progress. Approximately 300 SEAMAP cruises have been data based in Oracle System.

### E. On-line Data Base Status

Status of the SEAMAP data as of October 1, 1998 is shown in Attachment 14. The SEAMAP on-line data base had 422 cruises with a total of 2,729,283 records (approximately 108.7 megabytes of data). Since October 1998, forty cruises were processed through version 3.3 and added to the on-line data base as shown in Attachment 15. The SEAMAP on-line data base now contains 462 cruises with a total of 2,908,467 records (approximately 115.8 megabytes of data).



Mark McDuff  
Data Manager

## Attachment 1

## SEAMAP 1982

DATA SOURCE	VESSEL	CRUISE	CRUISE REPORT TITLE	ARCHIVE DISK #	STATUS	INVENTORY	BIOLOGICAL STATION	SPECIES	ENVIRONMENTAL	GENERAL L/F	SHRIMP L/F STATION	L/F MERISTICS	ICHTHYOPLANKTON STATION SAMPLE	SPECIES	L/F	TOTAL SEAMAP VERSION	DATE DBASED	
AL	23	821	CRUISE 821	R194	3	13	11	86	11	*1	*1	*1	*1	*1	*1	121	3.0	17-Jun-84
MS	17	821	CRUISE 821	R245	3	21	21	415	20	1385	*1	*1	*1	*1	*1	1842	3.2	18-Apr-88
US	4	127	SUMMER SEAMAP	R329	3	273	203	5391	244	*1	*1	*1	*1	71	222	8333	3.3	11-May-88
TOTAL						307	235	5882	275	1385			71	222		8298		

## STATUS CODES:

\*1 NOT TAKEN  
 2 ENTERED IN P.C.  
 3 ENTERED ON MIAMI UNISYS A10 SYSTEM(VERIFIED AND DATA BASED)

## SEAMAP 1983

DATA	VESSEL	CRUISE	CRUISE REPORT TITLE	ARCHIVE DISK #	STATUS	INVENTORY	BIOLOGICAL STATION	SPECIES	ENVIRONMENTAL	GENERAL L/F	SHRIMP L/F STATION	L/F MERISTICS	ICHTHYOPLANKTON STATION SAMPLE	SPECIES	L/F	TOTAL SEAMAP VERSION	DATE DBASED	
AL	23	831	CRUISE 831	R194	3	18	18	217	18	*1	*1	*1	*1	*1	*1	271	3.0	27-Jun-84
MS	17	831	CRUISE 831	R245	3	26	14	385	14	*1	14	832	*1	12	35	1320	3.2	18-Apr-88
US	4	135	SUMMER SEAMAP	R309	3	263	195	4343	248	*1	*1	*1	*1	57	162	8211	3.3	09-Jul-87
TOTAL						307	227	4945	280		14	832	89	197		8802		

## STATUS CODES:

\*1 NOT TAKEN  
 2 ENTERED IN P.C.  
 3 ENTERED ON MIAMI UNISYS A10 SYSTEM(VERIFIED AND DATA BASED)

## SEAMAP 1984

DATA	VESSEL	CRUISE	CRUISE REPORT TITLE	ARCHIVE DISK #	STATUS	INVENTORY	BIOLOGICAL STATION	SPECIES	ENVIRONMENTAL	GENERAL L/F	SHRIMP L/F STATION	L/F MERISTICS	ICHTHYOPLANKTON STATION SAMPLE	SPECIES	L/F	TOTAL SEAMAP VERSION	DATE DBASED	
AL	23	841	CRUISE 841	R194	3	10	10	120	10	613	*1	*1	*1	*1	*1	783	3.0	27-Jun-84
MS	17	841	SUMMER SEAMAP	R234	3	24	24	357	24	*1	8	165	*1	*1	*1	800	3.2	17-Aug-88
MS	17	842	ICHTHYOPLANKTON SURVEY	R229	3	10	*1	*1	*1	*1	*1	*1	10	30		40	3.1	25-Jul-88
US	4	145	SUMMER SEAMAP	R282	3	289	220	5588	259	11616	188	5093	*1	88	204	23883	3.2	04-Dec-88
TOTAL						333	254	6073	293	12429	192	6258	78	234		25088		

## STATUS CODES:

\*1 NOT TAKEN  
 2 ENTERED IN P.C.  
 3 ENTERED ON MIAMI UNISYS A10 SYSTEM(VERIFIED AND DATA BASED)

## SEAMAP 1985

DATA	VESSEL	CRUISE	CRUISE REPORT TITLE	ARCHIVE DISK #	STATUS	INVENTORY	BIOLOGICAL STATION	SPECIES	ENVIRONMENTAL	GENERAL L/F	SHRIMP L/F STATION	L/F MERISTICS	ICHTHYOPLANKTON STATION SAMPLE	SPECIES	L/F	TOTAL SEAMAP VERSION	DATE DBASED	
AL	23	851	SUMMER SEAMAP	R184	3	20	18	286	20	*1	5	88	*1	2	4	421	3.0	23-Oct-88
AL	23	852	FALL SEAMAP	R184	3	11	11	228	10	237	8	22	*1	*1	*1	523	3.0	23-Oct-88
MS	17	851	SUMMER SEAMAP	R210	3	36	31	754	31	*1	27	474	*1	5	15	1388	3.1	23-Feb-88
MS	17	852	FALL SEAMAP	R216	3	80	40	863	40	1839	*1	*1	*1	20	60	2832	3.1	05-May-88
MS	17	853	WINTER SEAMAP	R221	3	42	40	980	42	2752	40	1327	*1	2	8	8208	3.1	13-Jun-88
MS	17	854	FALL SEAMAP	R219	3	16	15	290	15	785	*1	*1	*1	5	15	1136	3.1	18-May-88
US	4	153	SUMMER SEAMAP	R247	3	355	317	6737	191	5226	292	15072	*1	38	112	28202	3.2	28-May-88
US	4	156	FALL SEAMAP	R232	3	411	407	9261	322	19909	188	5261	*1	2	8	38484	3.2	15-Sep-88
TOTAL						951	879	19407	671	30448	558	23124	74	217		78286		

## STATUS CODES:

\*1 NOT TAKEN  
 2 ENTERED IN P.C.  
 3 ENTERED ON MIAMI UNISYS A10 SYSTEM(VERIFIED AND DATA BASED)

## SEAMAP 1986

DATA	VESSEL	CRUISE	CRUISE REPORT TITLE	ARCHIVE DISK #	STATUS	INVENTORY	BIOLOGICAL STATION	SPECIES	ENVIRONMENTAL	GENERAL L/F	SHRIMP L/F STATION	L/F MERISTICS	ICHTHYOPLANKTON STATION SAMPLE	SPECIES	L/F	TOTAL SEAMAP VERSION	DATE DBASED		
AL	23	861	SUMMER SEAMAP	R180	3	13	12	210	13	"1	11	76	"1	1	3	338	3.0	13-Oct-83	
AL	23	862	FALL SEAMAP	R185	3	18	"1	"1	18	"1	"1	"1	"1	18	32	84	3.0	28-Oct-83	
AL	23	863	FALL SEAMAP	R180	3	8	8	123	8	44	"1	"1	"1	"1	"1	185	3.0	13-Oct-83	
LA	25	862	SPRING SEAMAP		3	21	21	124	21	"1	7	96	"1	21	42	"1	332	3.5	17-Feb-88
LA	25	865	SEAMAP		3	15	15	205	15	"1	10	151	"1	15	30	"1	441	3.3	23-Mar-88
LA	35	861	SPRING SEAMAP		3	24	24	359	24	"1	11	108	"1	24	48	"1	588	3.5	17-Feb-88
LA	35	863	SUMMER SEAMAP		3	24	24	315	24	"1	12	269	"1	23	46	"1	714	3.5	10-Mar-88
LA	35	864	FALL SEAMAP		3	24	24	563	24	"1	24	682	"1	24	77	"1	1748	3.5	10-Mar-88
LA	35	866	SEAMAP		3	24	24	633	24	"1	24	1087	"1	24	53	"1	1899	3.3	12-May-88
MS	17	861	BUTTERFISH	R208	3	51	38	817	15	"1	"1	"1	"1	18	46	"1	967	3.1	14-Sep-84
MS	17	862	SUMMER SEAMAP	R208	3	20	14	376	18	833	12	233	"1	8	18	"1	1526	3.1	11-Jan-85
MS	17	863	SUMMER SEAMAP	R208	3	14	14	412	12	824	13	165	"1	"1	"1	"1	1254	3.1	17-Jan-85
MS	17	864	FALL ICHTHYOPLANKTON	R208	3	9	"1	"1	9	"1	"1	"1	"1	9	27	"1	45	3.1	17-Jan-85
MS	17	865	FALL SEAMAP	R208	3	18	18	327	18	"1	"1	"1	"1	"1	"1	"1	381	3.1	11-Jan-85
SC	61	861	FALL SEAMAP	R124	3	68	68	1841	68	16326	"1	"1	"1	"1	"1	"1	18171	2.02	03-Feb-83
SC	61	862	WINTER SEAMAP	R124	3	44	22	532	44	2863	"1	"1	"1	"1	"1	"1	3325	2.02	03-Feb-83
SC	61	863	FALL SEAMAP	R124	3	70	70	1782	70	9895	"1	"1	"1	"1	"1	"1	11887	2.02	03-Feb-83
TX	31	861	SUMMER SEAMAP		3	8	8	213	8	"1	8	328	"1	"1	"1	"1	873	3.3	23-Jun-88
TX	32	861	SUMMER SEAMAP		3	8	8	141	8	"1	8	221	"1	"1	"1	"1	384	3.3	23-Jun-88
TX	33	861	SUMMER SEAMAP		3	8	8	157	8	"1	8	348	"1	"1	"1	"1	537	3.3	23-Jun-88
TX	34	861	SUMMER SEAMAP		3	9	9	132	8	"1	8	298	"1	"1	"1	"1	484	3.3	23-Jun-88
US	4	160	SUMMER SHRIMP/GROUND FISH	R205	3	214	165	4114	159	4885	128	4574	"1	43	129	"1	14388	3.1	05-Dec-84
US	4	161	FALL ICHTHYOPLANKTON	R182	3	128	"1	"1	119	"1	"1	"1	"1	91	273	"1	520	3.0	04-Mar-84
US	4	163	FALL SHRIMP/GROUND FISH	R203	3	308	305	8025	300	19008	"1	"1	"1	64	182	"1	28138	3.1	28-Oct-84
TOTAL						1142	897	19243	1031	54288	284	8634	377	1016			88818		

## STATUS CODES:

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 3 ENTERED ON MIAMI UNISYS A10 SYSTEM(VERIFIED AND DATA BASED)

## SEAMAP 1987

DATA	SOURCE VESSEL	CRUISE	CRUISE REPORT TITLE	ARCHIVE DISK #	STATUS	INVENTORY	BIOLOGICAL STATION	SPECIES	ENVIRONMENTAL	GENERAL L/F	SHRIMP L/F STATION	L/F MERISTICS	ICHTHYOPLANKTON STATION SAMPLE	SPECIES	L/F	TOTAL SEAMAP VERSION	DATE DBASED		
AL	23	871	SUMMER SEAMAP	R143	3	1	1	31	"1	"1	"1	"1	"1	"1	"1	"1	33	3.0	28-Jul-83
AL	23	872	SUMMER SEAMAP	R143	3	12	12	124	12	"1	3	4	"1	"1	"1	"1	167	3.0	08-Oct-83
AL	23	873	FALL ICHTHYOPLANKTON	R143	3	10	"1	"1	10	"1	"1	"1	"1	10	10	"1	30	3.0	08-Oct-83
AL	23	874	FALL SEAMAP	R149	3	5	5	42	"1	"1	"1	"1	"1	"1	"1	"1	82	3.0	08-Sep-83
AL	23	875	FALL SEAMAP	R151	3	8	8	45	8	"1	"1	"1	"1	"1	"1	"1	88	3.0	08-Oct-83
LA	25	873	SUMMER GROUND FISH	R353	3	21	21	200	21	"1	"1	"1	"1	21	42	"1	305	3.5	09-Jun-88
LA	25	875	FALL SEAMAP	R356	3	21	21	149	21	"1	"1	"1	"1	21	42	"1	284	3.5	02-Oct-88
LA	35	871	SPRING SEAMAP	R314	3	16	16	332	16	4202	"1	"1	"1	14	32	"1	4914	3.3	15-Oct-87
LA	35	872	SUMMER SEAMAP	R331	3	24	24	533	24	"1	"1	"1	"1	22	57	"1	882	3.3	16-Apr-88
LA	35	874	FALL SEAMAP	R341	3	24	24	482	24	"1	"1	"1	"1	12	29	"1	883	3.3	31-Aug-88
LA	35	876	FALL GROUND FISH	R351	3	12	12	245	12	"1	"1	"1	"1	"1	"1	"1	281	3.5	08-Jun-88
LA	35	877	FALL SEAMAP	R350	3	24	23	537	24	"1	"1	"1	"1	12	34	"1	842	3.5	23-Sep-88
MS	17	871	BUTTERFISH CRUISE	R144	3	53	68	1349	"1	4310	"1	"1	"1	"1	"1	"1	8785	3.0	04-Aug-83
MS	17	872	SUMMER SEAMAP	R170	3	78	68	1979	70	3827	41	807	"1	8	24	"1	8882	3.0	06-Dec-83
MS	17	873	FALL ICHTHYOPLANKTON	R137	3	19	"1	"1	19	"1	"1	"1	"1	19	42	"1	80	3.0	09-Jul-83
MS	17	874	FALL SEAMAP	R141	3	22	18	488	18	583	"1	"1	"1	4	9	"1	1148	3.0	10-Jul-83
SC	61	871	SPRING SEAMAP	R123	3	52	52	2085	52	7455	"1	"1	"1	"1	"1	"1	8878	2.02	15-Jan-83
SC	61	872	SUMMER SEAMAP	R123	3	52	52	2018	52	6919	"1	"1	"1	"1	"1	"1	8988	2.02	18-Jan-83
SC	61	873	FALL SEAMAP	R123	3	52	52	1811	52	4847	"1	"1	"1	"1	"1	"1	8814	2.02	15-Jan-83
SC	61	874	FALL SEAMAP	R123	3	54	54	2213	54	5289	"1	"1	"1	"1	"1	"1	7844	2.02	15-Jan-83
SC	61	875	WINTER SEAMAP	R123	3	52	52	2075	52	5455	"1	"1	"1	"1	"1	"1	7888	2.02	19-Jan-83
TX	31	871	SUMMER SEAMAP	R336	3	18	18	203	18	877	7	150	"1	"1	"1	"1	1285	3.5	28-Jul-88
TX	31	872	FALL SEAMAP	R356	3	18	18	245	18	1163	"1	"1	"1	"1	"1	"1	1458	3.5	15-Oct-88
TX	32	871	SUMMER SEAMAP	R336	3	18	18	201	18	843	13	138	"1	"1	"1	"1	1341	3.5	28-Jul-88
TX	32	872	FALL SEAMAP	R356	3	18	18	221	18	855	"1	"1	"1	"1	"1	"1	1124	3.5	15-Oct-88
TX	33	871	SUMMER SEAMAP	R336	3	18	18	94	18	292	3	3	"1	"1	"1	"1	440	3.5	28-Jul-88
TX	33	872	FALL SEAMAP	R356	3	18	18	104	18	191	"1	"1	"1	"1	"1	"1	343	3.5	15-Oct-88
TX	34	871	SUMMER SEAMAP	R336	3	18	18	257	18	1180	14	297	"1	"1	"1	"1	1788	3.5	28-Jul-88
TX	34	872	FALL SEAMAP	R356	3	18	18	152	18	824	"1	"1	"1	"1	"1	"1	824	3.5	15-Oct-88
TX	40	871	SUMMER SEAMAP	R336	3	18	18	99	18	279	9	73	"1	"1	"1	"1	808	3.5	28-Jul-88
TX	40	872	FALL SEAMAP	R356	3	18	18	236	18	1131	"1	"1	"1	"1	"1	"1	1418	3.5	15-Oct-88
US	4	167	SEAMAP SUMMER SHRIMP/GRODFISH	R202	3	509	483	9083	240	58315	308	7008	"1	44	131	"1	78027	3.0	10-Nov-84
US	4	168	FALL ICHTHYOPLANKTON	R180	3	91	"1	"1	91	"1	"1	"1	"1	91	273	"1	465	3.0	18-Feb-84
US	4	171	SEAMAP FALL SHRIMP/GROUND FISH	R180	3	359	350	7888	183	35358	"1	"1	"1	24	72	"1	44270	3.0	28-May-84
TOTAL						1729	1541	35581	1195	144085	398	8478	302	797			185784		

## STATUS CODES:

\*1 NOT TAKEN  
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Attachment 3

SEAMAP 1998

DATA SOURCE	VESSEL	CRUISE	CRUISE REPORT TITLE	ARCHIVE DISK #	STATUS	INVENTORY	BIOLOGICAL STATION	SPECIES	ENVIRONMENTAL	GENERAL LF	SHRIMP LF STATION	LF MERISTICS	ICHTHYOPLANKTON STATION	SAMPLE	SPECIES	LF	TOTAL	SEAMAP VERSION	DATE DBASED	
AL	23	001	SUMMER SEAMAP	R132	3	7	7	136	7	288	2	7	"1	"1	"1	"1	454	2.02	17-May-03	
AL	23	002	SUMMER SEAMAP	R132	3	4	4	43	4	85	"1	"1	"1	"1	"1	"1	140	2.02	17-May-03	
AL	23	003	RED DRUM/KING MACKEREL	R132	3	10	"1	"1	10	"1	"1	"1	"1	10	10	"1	30	2.02	17-May-03	
FL	36	001	SPRING ICHTHYOPLANKTON	R07	3	17	"1	"1	17	"1	"1	"1	"1	17	47	"1	61	2.0	16-Nov-02	
FL	36	002	FALL ICHTHYOPLANKTON	R06	3	36	"1	"1	36	"1	"1	"1	"1	36	107	"1	179	2.0	16-Nov-02	
LA	25	003	SUMMER SEAMAP	R235	3	21	21	195	21	2084	"1	"1	"1	21	21	"1	2343	3.2	30-Jun-00	
LA	25	005	FALL SEAMAP	R272	3	21	21	193	21	1410	"1	"1	"1	21	21	"1	1987	3.2	30-Jun-00	
LA	35	001	SPRING SEAMAP	R200	3	24	24	563	24	7323	"1	"1	"1	11	28	"1	7984	3.1	12-Oct-04	
LA	35	002	SUMMER SEAMAP	R209	3	24	24	571	24	7888	19	328	"1	12	36	"1	8914	3.1	17-Jan-05	
LA	35	004	FALL SEAMAP	R228	3	20	20	489	20	5255	18	276	"1	10	27	"1	6127	3.1	19-Jun-05	
LA	35	006	FALL SEAMAP	R273	3	24	23	668	24	8036	"1	"1	"1	8	24	"1	8790	3.2	12-Aug-00	
MS	17	001	SUMMER SEAMAP	R133	3	47	41	926	47	6200	24	525	"1	6	17	"1	7827	3.0	01-Jun-03	
MS	17	002	FALL ICHTHYOPLANKTON	R134	3	33	"1	"1	33	"1	"1	"1	"1	33	82	"1	148	2.02	04-Jun-03	
MS	17	003	FALL SEAMAP	R136	3	26	23	644	26	4377	"1	"1	"1	3	9	"1	5105	3.0	01-Jun-03	
SC	51	001	SPRING SEAMAP	R105	3	52	52	1593	52	4096	"1	"1	"1	"1	"1	"1	5625	2.02	20-Nov-02	
SC	51	002	SUMMER SEAMAP	R108	3	52	52	1839	50	5518	"1	"1	"1	"1	"1	"1	7511	2.02	01-Dec-02	
SC	51	003	SUMMER SEAMAP	R107	3	52	52	2063	44	9235	"1	"1	"1	"1	"1	"1	11448	2.02	02-Dec-02	
SC	51	004	SUMMER SEAMAP	R106	3	52	52	1988	52	7234	"1	"1	"1	"1	"1	"1	9376	2.02	20-Nov-02	
SC	51	005	FALL SEAMAP	R109	3	52	52	2347	52	8807	"1	"1	"1	"1	"1	"1	11310	2.02	20-Nov-02	
SC	51	006	FALL SEAMAP	R110	3	52	52	2190	52	7501	"1	"1	"1	"1	"1	"1	8847	2.02	01-Dec-02	
SC	51	007	FALL SEAMAP	R111	3	52	52	2223	52	6533	"1	"1	"1	"1	"1	"1	8912	2.02	26-Nov-02	
SC	51	008	FALL SEAMAP	R112	3	52	52	2351	42	7552	"1	"1	"1	"1	"1	"1	10046	2.02	02-Dec-02	
TX	31	001	SUMMER SEAMAP	R04	3	18	18	344	18	1708	13	442	"1	"1	"1	"1	2563	2.02	04-Aug-03	
TX	31	002	FALL SEAMAP	R145	3	18	18	76	18	180	"1	"1	"1	"1	"1	"1	294	2.02	05-Aug-03	
TX	32	001	SUMMER SEAMAP	R145	3	18	18	290	18	1312	14	290	"1	"1	"1	"1	1983	2.02	04-Aug-03	
TX	32	002	FALL SEAMAP	R145	3	18	18	225	18	969	"1	"1	"1	"1	"1	"1	1242	2.02	05-Aug-03	
TX	33	001	SUMMER SEAMAP	R145	3	18	18	117	18	330	5	13	"1	"1	"1	"1	513	2.02	04-Aug-03	
TX	33	002	FALL SEAMAP	R145	3	18	18	247	18	1003	"1	"1	"1	"1	"1	"1	1296	2.02	05-Aug-03	
TX	34	001	SUMMER SEAMAP	R145	3	18	18	144	18	644	10	43	"1	"1	"1	"1	898	2.02	04-Aug-03	
TX	34	002	FALL SEAMAP	R145	3	18	18	210	18	920	"1	"1	"1	"1	"1	"1	1178	2.02	05-Aug-03	
TX	40	001	SUMMER SEAMAP	R145	3	18	18	239	18	905	16	249	"1	"1	"1	"1	1457	2.02	04-Aug-03	
TX	40	002	FALL SEAMAP	R145	3	18	18	131	18	461	"1	"1	"1	"1	"1	"1	640	2.02	05-Aug-03	
US	4	172	STRIPED BASS SURVEY	R172	3	571	374	327	82	"1	"1	"1	"1	176	"2	"1	1364	3.0	20-Jan-04	
US	4	173	SPRING ICHTHYOPLANKTON SURVEY	R146	3	185	"1	"1	185	"1	"1	"1	"1	143	290	1500	4537	3.0	20-Sep-05	
US	4	174	SEAMAP SHRIMP/GROUNDFISH	R167	3	408	367	7465	192	40083	220	4850	5	19	57	"1	53657	3.0	11-Dec-03	
US	4	176	FALL ICHTHYOPLANKTON SURVEY	R130	3	188	"1	"1	82	"1	"1	"1	"1	188	159	1464	4688	3.1	26-Aug-04	
US	4	177	SEAMAP FALL SHRIMP/GROUNDFISH	R168	3	598	565	12342	210	54937	"1	"1	"1	98	39	117	68857	3.0	02-Dec-03	
TOTAL						2800	2140	43188	1581	202832	341	7025	103	731	1050	3033	8474	28867		

STATUS CODES:

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## SEAMAP 1989

DATA SOURCE	VESSEL	CRUISE	CRUISE REPORT TITLE	ARCHIVE DISK #	STATUS	INVENTORY	BIOLOGICAL STATION	SPECIES	ENVIRONMENTAL	GENERAL LF	SHRIMP LF STATION	LF MERISTICS	ICHTHYOPLANKTON STATION	SAMPLE	SPECIES	LF	TOTAL SEAMAP VERSION	DATE DEBASED	
AL	23	001	SEAMAP CRUISE AL 001	R41	3	7	7	103	7	363	3	96	*1	*1	*1	*1	586	2.0	19-Mar-82
AL	23	002	SEAMAP CRUISE AL 002	R41	3	10	10	205	10	991	7	166	*1	*1	*1	*1	1369	2.0	19-Mar-82
AL	23	003	RED DRUM-KING MACKEREL CRUISE	R41	3	10	*1	*1	10	*1	*1	*1	*1	10	10	*1	30	2.0	19-Mar-82
AL	23	004	SEAMAP FALL GROUND FISH CRUISE	R41	3	12	12	293	12	1452	11	184	*1	*1	*1	*1	1956	2.0	19-Mar-82
FL	36	001	SPRING 1989 ICHTHYOPLANKTON	R05	3	25	*1	*1	25	*1	*1	*1	*1	25	75	*1	125	2.0	22-Jul-82
FL	36	002	FALL 1989 ICHTHYOPLANKTON	R04	3	36	*1	*1	36	*1	*1	*1	*1	36	108	*1	180	2.0	22-Jul-82
LA	25	003	LA 1989 AREA SUMMER SEAMAP	R78	3	21	21	163	21	1106	11	118	*1	21	24	*1	1485	2.0	26-Jul-82
LA	25	005	LA 1989 AREA FALL SEAMAP	R74	3	21	21	228	21	1943	11	224	*1	21	42	*1	2511	2.0	26-Jul-82
LA	35	001	LA 1989 SPRING SEAMAP	R78	3	24	24	614	24	7914	21	140	*1	8	21	*1	6782	2.0	26-Jul-82
LA	35	002	LA 1989 SUMMER SEAMAP	R77	3	22	22	439	22	3984	17	292	*1	12	36	*1	4834	2.0	26-Jul-82
LA	35	004	LA 1989 FALL SEAMAP	R75	3	24	24	572	24	4390	24	499	*1	12	36	*1	5693	2.0	26-Jul-82
LA	35	006	LA OREGON 2 PELICAN COMPARISON	R73	3	10	10	286	10	2719	9	185	*1	*1	*1	*1	3229	2.0	26-Jul-82
LA	35	007	LA 1989 WINTER SEAMAP	R72	3	16	16	493	16	3635	16	567	*1	7	21	*1	4780	2.0	26-Jul-82
MS	17	001	SUMMER SHRIMP/GROUND FISH SVY	R20	3	41	34	989	41	7581	20	261	*1	7	21	*1	8988	2.0	31-Oct-91
MS	17	002	FALL ICHTHYOPLANKTON SURVEY	R20	3	65	*1	*1	65	*1	*1	*1	*1	65	75	*1	205	2.0	30-Oct-91
MS	17	003	FALL SHRIMP/GROUND FISH SURVEY	R18	3	20	17	568	20	4631	*1	*1	*1	3	9	*1	5265	2.0	01-Nov-91
SC	51	001	SUMMER 89 SOUTH ATLANTIC	R56	3	212	212	7990	212	12944	179	2299	*1	*1	*1	*1	23748	2.0	06-Jul-82
SC	51	002	SUMMER 89 SOUTH ATLANTIC	R53	3	106	106	2993	106	5930	48	806	*1	*1	*1	*1	9797	2.0	06-Jul-82
SC	51	003	FALL SEAMAP 89 SOUTH ATLANTIC	R56	3	212	212	5753	212	9372	116	1902	*1	*1	*1	*1	17779	2.0	06-Jul-82
TX	31	001	CRUISE 001 GULF OF MEXICO	R50	3	16	16	174	16	575	9	115	*1	*1	*1	*1	821	2.0	18-May-82
TX	32	001	CRUISE 001 GULF OF MEXICO	R50	3	16	16	323	16	1991	13	709	*1	*1	*1	*1	3064	2.0	18-May-82
TX	33	001	CRUISE 001 GULF OF MEXICO	R50	3	16	16	354	16	1995	16	546	*1	*1	*1	*1	2929	2.0	18-May-82
TX	34	001	CRUISE 001 GULF OF MEXICO	R50	3	16	16	298	16	1481	16	651	*1	*1	*1	*1	2494	2.0	18-May-82
TX	40	001	CRUISE 001 GULF OF MEXICO	R50	3	16	16	205	16	1035	15	382	*1	*1	*1	*1	1885	2.0	18-May-82
TX	31	002	TX CRUISE 002	R51	3	16	16	199	16	582	*1	*1	*1	*1	*1	*1	829	2.0	18-May-82
TX	32	002	TX CRUISE 002	R51	3	16	16	307	16	1826	*1	*1	*1	*1	*1	*1	2181	2.0	18-May-82
TX	33	002	TX CRUISE 002	R51	3	16	16	312	16	1421	*1	*1	*1	*1	*1	*1	1781	2.0	18-May-82
TX	34	002	TX CRUISE 002	R51	3	16	16	204	16	1112	*1	*1	*1	*1	*1	*1	1394	2.0	18-May-82
TX	40	002	TX CRUISE 002	R51	3	16	16	263	16	1462	*1	*1	*1	*1	*1	*1	1773	2.0	18-May-82
US	4	179	SA-SEAMAP/BEAUFORT ECOSYSTEM	R98	3	571	438	847	37	2176	*1	*1	*1	21	63	*1	4099	2.0	05-Nov-82
US	4	180	OREGON II SUMMER SEAMAP	R95	3	244	237	4178	172	28040	140	4815	*1	*1	*1	*1	35999	2.0	21-Oct-82
US	4	183	SEAMAP ICHTHYOPLANKTON PLUME	R181	3	114	*1	*1	113	*1	*1	*1	*1	77	150	1855	6437	2.02	02-Nov-82
US	4	184	SEAMAP SHRIMP/GROUND FISH	R90	3	512	490	11997	229	69970	*1	*1	*1	8	39	117	80321	2.0	09-Oct-82
US	49	002	SEAMAP ICHTHYOPLANKTON/THERMAL	R115	3	141	*1	*1	131	*1	*1	*1	*1	125	212	*1	484	2.0	15-Dec-82
TOTAL						2636	2073	40720	1736	177591	702	14639	8	489	1020	1855	4205	247483	

## STATUS CODES:

\*1 NOT TAKEN  
 2 ENTERED IN P.C.  
 3 ENTERED ON MIAMI UNISYS A10 SYSTEM (VERIFIED AND DATA BASED)



## SEAMAP 1990

DATA SOURCE	VESSEL	CRUISE	CRUISE REPORT TITLE	ARCHIVE DISK #	STATUS	INVENTORY	BIOLOGICAL STATION	SPECIES	ENVIRONMENTAL	GENERAL L/I	SHRIMP L/I STATION	L/F MERISTICS	ICHTHYOPLANKTON STATION	SAMPLE	SPECIES	L/F	TOTAL SEAMAP VERSION	DATE DBASED		
AL	23	901	SUMMER SHRIMP GROUND FISH	R41	3	14	14	159	14	684	5	74	*1	*1	*1	*1	994	2.0	28-Mar-92	
AL	23	902	AL JULY SHRIMP-GROUND FISH	R41	3	1	1	15	1	36	1	3	*1	*1	*1	*1	58	2.0	28-Mar-92	
AL	23	903	FALL KING MACKEREL/DRUM	R41	3	10	*1	*1	10	*1	*1	*1	*1	10	10		30	2.0	28-Mar-92	
AL	23	904	FALL SHRIMP GROUND FISH	R41	3	13	13	203	9	775	*1	*1	*1	*1	*1	*1	1013	2.0	28-Mar-92	
FL	36	901	SPRING 1990 ICHTHYOPLANKTON	R63	3	21	*1	*1	21	*1	*1	*1	*1	21	61		103	2.0	22-Jul-92	
FL	36	902	FALL 1990 ICHTHYOPLANKTON	R62	3	30	*1	*1	30	*1	*1	*1	*1	30	90		150	2.0	22-Jul-92	
LA	35	901	LA SPRING SEAMAP	R71	3	24	18	457	23	3581	15	128	*1	6	15		4261	2.0	29-Jul-92	
LA	35	902	LA SUMMER SEAMAP	R70	3	31	24	444	31	3151	15	171	*1	7	21		3688	2.0	29-Jul-92	
LA	25	903	LA AREA SEAMAP CRUISE 903	R69	3	21	21	142	21	1436	9	202	*1	21	42		1884	2.0	29-Jul-92	
LA	35	904	LA FALL SEAMAP	R68	3	31	24	381	25	2954	16	174	*1	7	20		3627	2.0	29-Jul-92	
LA	25	905	LA FALL SEAMAP	R67	3	21	21	125	21	833	7	121	*1	21	42		1191	2.0	29-Jul-92	
LA	35	906	LA WINTER SEAMAP	R66	3	25	21	554	24	5678	20	952	*1	4	12		7866	2.0	29-Jul-92	
MS	17	901	SUMMER SHRIMP/GROUND FISH	R20	3	44	40	1086	44	8986	10	395	*1	4	12		10499	2.0	01-Nov-91	
MS	17	902	FALL ICHTHYOPLANKTON SURVEY	R188	3	107	*1	*1	107	*1	*1	*1	*1	107	113	32	91	450	2.0	10-May-94
MS	17	903	FALL SHRIMP/GROUND FISH SURVEY	R20	3	24	24	727	20	4470	*1	*1	*1	*1	*1	*1	5295	2.0	01-Nov-91	
SC	51	901	SPRING SEAMAP SURVEY S ATL	R57	3	210	210	4529	208	15747	60	702	*1	*1	*1	*1	21696	2.0	08-Jul-92	
SC	51	902	SUMMER SEAMAP S. ATLANTIC 90	R58	3	156	156	4552	156	14060	91	1432	*1	*1	*1	*1	20803	2.0	08-Jul-92	
SC	51	903	FALL SEAMAP SURVEY SOUTH ATL	R59	3	182	182	6041	182	12963	128	2884	*1	*1	*1	*1	22282	2.0	08-Jul-92	
TX	31	901	SUMMER SHRIMP/GROUND FISH	R43	3	16	16	128	16	456	9	69	*1	*1	*1	*1	710	2.0	27-Mar-92	
TX	32	901	SUMMER SHRIMP/GROUND FISH	R43	3	16	16	267	16	1569	11	431	*1	*1	*1	*1	2328	2.0	27-Mar-92	
TX	33	901	SUMMER SHRIMP/GROUND FISH	R43	3	16	16	269	16	1905	14	205	*1	*1	*1	*1	2161	2.0	27-Mar-92	
TX	34	901	SUMMER SHRIMP/GROUND FISH	R43	3	16	16	125	16	906	5	101	*1	*1	*1	*1	885	2.0	27-Mar-92	
TX	40	901	SUMMER SHRIMP/GROUND FISH	R43	3	16	16	120	16	786	7	218	*1	*1	*1	*1	1179	2.0	27-Mar-92	
TX	31	902	SHRIMP/GROUND FISH SURVEY	R42	3	16	16	127	16	288	*1	*1	*1	*1	*1	*1	463	2.0	30-Mar-92	
TX	32	902	SHRIMP/GROUND FISH SURVEY	R42	3	16	16	244	16	894	*1	*1	*1	*1	*1	*1	1186	2.0	30-Mar-92	
TX	33	902	SHRIMP/GROUND FISH SURVEY	R42	3	16	16	146	16	497	*1	*1	*1	*1	*1	*1	691	2.0	30-Mar-92	
TX	34	902	SHRIMP/GROUND FISH SURVEY	R42	3	16	16	99	16	498	*1	*1	*1	*1	*1	*1	643	2.0	30-Mar-92	
TX	40	902	SHRIMP/GROUND FISH SURVEY	R42	3	16	16	197	16	872	*1	*1	*1	*1	*1	*1	1117	2.0	30-Mar-92	
US	4	187	SEAMAP ICHTHYOPLANKTON	R27	3	151	*1	*1	139	*1	*1	*1	*1	139	406		686	2.0	07-Jan-92	
US	4	188	SPRING SHRIMP/GROUND FISH	R11	3	290	267	5620		34308	219	6063	*1	18	57		47074	2.0	27-Sep-91	
US	4	189	PLANKTON SURVEY GULF/AMEX	R12	3	133	*1	*1	131	*1	*1	*1	*1	108	320		584	2.0	20-Sep-91	
US	4	191	SEAMAP/GROUND FISH SURVEY GOM	R142	3	293	290	6725	216	36457	*1	*1	*1	2	39	117	47102	2.0	23-Sep-91	
US	28	901	SEAMAP ECOSYSTEM S ATLANTIC	R52	3	136	80	70	62	*1	*1	*1	*1	40	*2	*2	348	2.0	10-Jun-92	
TOTAL						2128	1566	33572	1867	157070	644	14345	2	563	1340	32	91	212677		

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Attachment 6

SEAMAP 1991

DATA SOURCE	VESSEL	CRUISE	CRUISE REPORT TITLE	ARCHIVE DISK #	STATUS	INVENTORY	BIOLOGICAL STATION	SPECIES	ENVIRONMENTAL	GENERAL LF	SHRIMP LF STATION	LF MERISTICS	ICHTHYOPLANKTON STATION	SAMPLE	SPECIES	LF	TOTAL SEAMAP VERSION	DATE OBAED		
AL	23	011	SUMMER SHRIMP GROUND FISH GOM	R41	3	10	10	159	10	450	7	155	*1	*1	*1	*1	801	2.0	28-Mar-02	
AL	23	012	KING MACKEREL RED DRUM PLANK	R41	3	10	10	*1	10	*1	*1	*1	*1	10	10	*1	30	2.0	28-Mar-02	
AL	23	013	GROUND FISH SURVEY GOM	R41	3	7	7	174	7	935	*1	*1	*1	*1	*1	*1	1130	2.0	28-Mar-02	
FL	36	011	SPRING 1991 ICHTHYOPLANKTON	R80	3	13	*1	*1	13	*1	*1	*1	*1	13	36	*1	66	2.0	22-Jul-02	
FL	36	012	FALL 1991 ICHTHYOPLANKTON	R81	3	23	*1	*1	23	*1	*1	*1	*1	23	98	*1	114	2.0	22-Jul-02	
LA	25	013	SUMMER SEAMAP	R101	3	21	21	130	21	1479	6	62	*1	21	42	*1	1782	2.02	30-Nov-02	
LA	25	015	FALL SEAMAP	R103	3	21	21	183	21	1716	12	230	*1	21	42	*1	2256	2.02	30-Nov-02	
LA	35	011	SPRING SEAMAP	R09	3	29	22	902	29	6570	19	188	*1	7	21	*1	7480	2.02	30-Nov-02	
LA	35	012	SUMMER SEAMAP	R100	3	31	24	390	31	3306	12	251	*1	7	21	*1	4098	2.02	30-Nov-02	
LA	35	014	FALL SEAMAP	R102	3	31	24	461	30	3096	22	395	*1	7	21	*1	4080	2.02	30-Nov-02	
LA	35	016	WINTER SEAMAP	R104	3	31	24	805	30	5814	24	779	*1	7	16	*1	7324	2.02	01-Dec-02	
MS	17	011	SHRIMP/GROUND FISH SURVEY	R186	3	41	38	856	38	6402	27	988	*1	2	6	88	248	7324	2.0	10-May-04
MS	17	012	FALL ICHTHYOPLANKTON SUR GOM	R186	3	118	*1	*1	118	*1	*1	*1	*1	101	107	35	132	510	2.0	19-May-04
MS	17	013	SEAMAP CRUISE MS 913	R38	3	27	27	857	27	4652	*1	*1	*1	*1	*1	*1	*1	5390	2.0	26-Feb-02
PR	56	011	CARIBBEAN SURVEY	R269	3	417	417	415	*1	*1	*1	*1	1741	*1	*1	*1	*1	2990	3.2	01-Jun-06
PR	57	012	CARIBBEAN SURVEY	R253	3	102	102	89	*1	*1	*1	*1	341	*1	*1	*1	*1	634	3.2	24-Jun-06
SC	51	011	SPRING SOUTH ATLANTIC SURVEY	R44	3	210	210	6022	210	15930	108	1931	*1	*1	*1	*1	*1	24821	2.0	15-Apr-02
SC	51	012	SUMMER SOUTH ATLANTIC SEAMAP	R48	3	156	156	3979	156	12888	75	1155	*1	*1	*1	*1	*1	18395	2.0	05-May-02
SC	51	013	FALL SEAMAP SOUTH ATLANTIC	R49	3	172	172	4732	172	12249	99	2081	*1	*1	*1	*1	*1	19657	2.0	12-May-02
TX	31	011	SUMMER SEAMAP	R89	3	16	16	250	16	1354	10	78	*1	*1	*1	*1	*1	1736	2.0	28-Sep-02
TX	32	011	SUMMER SEAMAP	R89	3	16	16	270	16	1406	13	156	*1	*1	*1	*1	*1	1893	2.0	28-Sep-02
TX	33	011	SUMMER SEAMAP	R89	3	16	16	182	16	598	10	99	*1	*1	*1	*1	*1	935	2.0	28-Sep-02
TX	34	011	SUMMER SEAMAP	R89	3	16	16	138	16	681	10	51	*1	*1	*1	*1	*1	828	2.0	28-Sep-02
TX	40	011	SUMMER SEAMAP	R89	3	16	16	187	16	891	12	182	*1	*1	*1	*1	*1	1320	2.0	28-Sep-02
TX	31	012	FALL SEAMAP	R93	3	16	16	154	16	639	*1	*1	*1	*1	*1	*1	*1	841	2.0	16-Oct-02
TX	32	012	FALL SEAMAP	R93	3	16	16	236	16	1015	*1	*1	*1	*1	*1	*1	*1	1289	2.0	16-Oct-02
TX	33	012	FALL SEAMAP	R93	3	16	16	112	16	352	*1	*1	*1	*1	*1	*1	*1	512	2.0	16-Oct-02
TX	34	012	FALL SEAMAP	R93	3	16	16	148	16	563	*1	*1	*1	*1	*1	*1	*1	789	2.0	16-Oct-02
TX	40	012	FALL SEAMAP	R93	3	16	16	137	16	545	*1	*1	*1	*1	*1	*1	*1	730	2.0	16-Oct-02
US	4	182	ATLANTIC SEAMAP	R17	3	314	208	*1	107	*1	*1	*1	*1	*1	*1	*1	*1	628	2.0	30-Oct-01
US	4	194	SEAMAP GULF PLANKTON SUR	R45	3	159	*1	*1	139	*1	*1	*1	*1	159	442	*1	740	2.0	15-Apr-02	
US	4	186	SEAMAP SPRING GROUND FISH	R25	3	288	267	6546	223	40967	188	7976	*1	37	111	*1	86284	2.0	12-Dec-01	
US	4	187	FALL BOTTOM FISH SURVEY	R189	3	327	263	7369	241	42539	*1	*1	*1	40	120	1363	3336	56897	2.0	19-May-04
US	28	014	FALL SEAMAP ICHTHYOPLANKTON	R186	3	196	*1	*1	138	*1	*1	*1	*1	98	285	1102	2487	4179	2.0	17-May-04
TOTAL						2884	2204	35184	1954	10697	652	16736	551	1352	2578	6202	238525			

STATUS CODES:

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## SEAMAP 1992

DATA SOURCE	VESSEL	CRUISE	CRUISE REPORT TITLE	ARCHIVE DISK #	STATUS	INVENTORY	BIOLOGICAL STATION	SPECIES	ENVIRONMENTAL	GENERAL LF	SHRIMP LF STATION	LF MERISTICS	ICHTHYOPLANKTON STATION	SAMPLE	SPECIES	LF	TOTAL SEAMAP VERSION	DATE OBASED		
AL	23	920	REEFFISH TRAPVIDEO	R177	3	7	7	3	*1	*1	*1	*1	20	*1	*1	*1	37	3.0	28-Jan-94	
AL	23	921	SUMMER SEAMAP	R116	3	16	16	332	16	2059	6	78	*1	*1	*1	*1	2523	2.1	08-Jan-93	
AL	23	922	FALL SEAMAP ICHTHYOPLANKTON	R119	3	9	*1	*1	9	*1	*1	*1	9	9	9	*1	27	2.1	08-Jan-93	
AL	23	923	FALL SEAMAP	R120	3	6	6	193	6	1099	*1	*1	*1	*1	*1	*1	1919	2.1	08-Jan-93	
FL	29	921	SPRING ICHTHYOPLANKTON	R186	3	21	*1	*1	21	*1	*1	*1	21	57	637	1521	2467	2.02	18-May-94	
FL	29	922	FALL ICHTHYOPLANKTON	R186	3	14	*1	*1	14	*1	*1	*1	13	37	426	634	1323	2.02	20-Sep-93	
LA	35	921	SPRING SEAMAP	R182	3	30	24	625	30	7091	24	233	*1	6	18	*1	8045	3.0	18-Nov-93	
LA	35	922	SUMMER SEAMAP	R182	3	31	24	373	31	4215	12	86	*1	7	21	*1	4785	3.0	18-Nov-93	
LA	35	923	FALL SEAMAP	R182	3	25	20	342	23	2551	19	315	*1	5	10	*1	3305	3.0	18-Nov-93	
LA	35	924	WINTER SEAMAP	R182	3	31	24	659	31	7812	23	674	*1	7	20	*1	8274	3.0	18-Nov-93	
MS	17	921	SEAMAP TRAPVIDEO SURVEY	R125	3	16	16	13	16	48	*1	*1	*1	*1	*1	*1	109	3.0	02-Mar-93	
MS	17	922	SUMMER SEAMAP	R126	3	44	42	1093	38	8408	32	916	*1	2	6	*1	10579	2.02	08-Mar-93	
MS	17	924	FALL GROUND FISH	R158	3	15	15	335	15	2445	*1	*1	*1	*1	*1	*1	2625	3.0	08-Oct-93	
PR	56	921	CARIBBEAN SURVEY	R292	3	600	600	734	*1	*1	*1	*1	2674	*1	*1	*1	4606	3.2	23-Jul-96	
PR	56	922	CARIBBEAN SURVEY	R293	3	647	647	327	*1	*1	*1	*1	709	*1	*1	*1	2330	3.2	23-Jul-96	
PR	57	922	CARIBBEAN SURVEY	R258	3	90	90	190	*1	*1	*1	*1	628	*1	*1	*1	868	3.2	05-Jul-96	
SC	81	921	SPRING SOUTH ATLANTIC SURVEY	R99	3	210	210	5045	210	13967	95	1053	*1	*1	*1	*1	20790	2.02	29-Sep-92	
SC	81	922	SUMMER SOUTH ATLANTIC SURVEY	R117	3	156	156	3801	156	8568	50	537	*1	*1	*1	*1	13434	2.02	30-Dec-92	
SC	81	923	FALL SEAMAP	R122	3	188	188	4958	188	9982	89	1186	*1	*1	*1	*1	14601	2.02	27-Jan-93	
TX	31	921	SUMMER SEAMAP	R120	3	16	16	168	16	627	12	159	*1	*1	*1	*1	1214	2.02	25-Mar-93	
TX	32	921	SUMMER SEAMAP	R120	3	16	16	187	16	1043	7	34	*1	*1	*1	*1	1329	2.02	25-Mar-93	
TX	33	921	SUMMER SEAMAP	R120	3	16	16	195	16	805	7	23	*1	*1	*1	*1	1078	2.02	25-Mar-93	
TX	34	921	SUMMER SEAMAP	R120	3	16	16	156	16	789	12	60	*1	*1	*1	*1	1077	2.02	25-Mar-93	
TX	40	921	SUMMER SEAMAP	R120	3	16	16	147	16	727	9	63	*1	*1	*1	*1	894	2.02	25-Mar-93	
TX	31	922	FALL SEAMAP	R136	3	16	16	227	16	1141	*1	*1	*1	*1	*1	*1	1416	3.0	01-Jul-93	
TX	32	922	FALL SEAMAP	R136	3	16	16	291	16	1655	*1	*1	*1	*1	*1	*1	1994	3.0	01-Jul-93	
TX	33	922	FALL SEAMAP	R136	3	16	16	190	16	454	*1	*1	*1	*1	*1	*1	682	3.0	01-Jul-93	
TX	34	922	FALL SEAMAP	R136	3	16	16	270	16	1442	*1	*1	*1	*1	*1	*1	1760	3.0	01-Jul-93	
TX	40	922	FALL SEAMAP	R136	3	16	16	193	16	910	*1	*1	*1	*1	*1	*1	1151	3.0	01-Jul-93	
US	4	199	SPRING ICHTHYOPLANKTON	R128	3	248	*1	*1	208	*1	*1	*1	147	436			882	2.02	09-Mar-93	
US	4	200	SUMMER SEAMAP	R121	3	284	280	6763	221	39987	174	3463	*1	41	123		81276	2.02	19-Jan-93	
US	4	201	FALL ICHTHYOPLANKTON	R186	3	49	*1	*1	49	*1	*1	*1	27	79	1046	2236	3459	3.0	24-May-94	
US	4	202	FALL BOTTOMFISH SURVEY	R157	3	204	273	7061	220	43846	*1	*1	6	30	80	376	732	82800	3.0	20-Sep-95
US	28	923	REEFFISH CRUISE	R140	3	179	147	113	149	*1	*1	*1	607	29	147		1342	3.0	14-Jul-93	
US	28	925	FALL ICHTHYOPLANKTON	R148	3	116	*1	*1	116	*1	*1	*1	73	219			453	3.0	02-Sep-93	
VI	58	922	VIRGIN ISL REEFFISH 1992	R220	3	63	63	85	*1	*1	*1	*1	128	*1	*1	*1	339	3.1	18-May-95	
VI	59	922	VIRGIN ISL REEFFISH 1992	R220	3	16	16	12	*1	*1	*1	*1	20	*1	*1	*1	64	3.1	18-May-95	
TOTAL						3599	3006	35033	1629	161531	571	8924	4762	417	1272	2987	6323	229637		

## STATUS CODES:

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 3 ENTERED ON MIAMI UNSYS A10 SYSTEM(VERIFIED AND DATA BASED)

SEAMAP 1993

DATA SOURCE	VESSEL	CRUISE	CRUISE REPORT TITLE	ARCHIVE DISK #	STATUS	INVENTORY	BIOLOGICAL STATION	SPECIES	ENVIRONMENTAL	GENERAL L/I	SHRIMP L/I STATION	L/F MERISTICS	ICHTHYOPLANKTON STATION	SAMPLE	SPECIES	L/F	TOTAL SEAMAP VERSION	DATE DBASED		
AL	23	030	COMPARATIVE TOW	R175	3	22	22	494	18	441	"1	"1	"1	"1	"1	"1	997	3.0	19-Jan-04	
AL	23	031	SUMMER SEAMAP	R175	3	10	10	212	10	953	"1	95	"1	"1	"1	"1	1295	3.0	19-Jan-04	
AL	23	032	FALL ICHTHYOPLANKTON	R175	3	9	9	"1	9	"1	"1	"1	0	0	"1	"1	27	3.0	19-Jan-04	
AL	23	033	FALL SEAMAP	R175	3	9	9	199	9	1108	"1	"1	"1	"1	"1	"1	1331	3.0	19-Jan-04	
FL	30	031	REEFFISH TRAP/VIDEO	R184	3	11	11	24	"1	"1	"1	"1	343	"1	"1	"1	400	3.0	05-Jul-04	
FL	30	032	FALL ICHTHYOPLANKTON	R183	3	19	"1	"1	19	"1	"1	"1	"1	19	57	"1	95	3.0	10-Nov-03	
FL	28	032	FALL ICHTHYOPLANKTON	R178	3	36	"1	"1	36	"1	"1	"1	"1	36	106	"1	180	3.0	15-Feb-04	
LA	35	031	SPRING SEAMAP	R184	3	31	24	690	30	8117	20	189	"1	7	21	"1	9112	3.0	08-Apr-04	
LA	35	032	SUMMER SEAMAP	R184	3	31	24	443	30	5597	22	535	"1	7	21	"1	6703	3.0	08-Apr-04	
LA	35	033	FALL SEAMAP	R184	3	31	24	501	29	5012	19	414	"1	7	21	"1	6051	3.0	18-Apr-04	
LA	35	034	WINTER SEAMAP	R184	3	29	24	619	29	7815	23	721	"1	5	15	"1	9075	3.0	18-Apr-04	
MS	17	030	SEAMAP COMPARATIVE TOW	R159	3	22	22	551	"1	409	"1	"1	"1	"1	"1	"1	1004	3.0	15-Oct-03	
MS	17	031	TRAP/VIDEO	R195	3	8	8	2	8	"1	"1	"1	4	"1	"1	"1	30	3.0	08-Mar-04	
MS	17	032	SUMMER SEAMAP	R195	3	37	35	908	37	7420	29	632	"1	2	8	"1	9004	3.0	08-Mar-04	
MS	17	033	FALL ICHTHYOPLANKTON	R193	3	48	"1	"1	48	"1	"1	"1	"1	48	48	"1	144	3.0	17-Jun-04	
MS	17	034	FALL ICHTHYOPLANKTON	R195	3	47	"1	"1	47	"1	"1	"1	"1	47	53	"1	147	3.0	05-Jul-04	
MS	17	035	FALL SEAMAP	R195	3	27	25	688	27	4713	"1	"1	"1	2	8	"1	5486	3.0	07-Jun-04	
PR	56	031	CARIBBEAN CRUISE	R254	3	600	600	466	"1	"1	"1	"1	1297	"1	"1	"1	2883	3.2	22-Jul-06	
PR	56	032	CARIBBEAN CRUISE	R295	3	563	563	468	"1	"1	"1	"1	1106	"1	"1	"1	2700	3.2	24-Jul-06	
PR	57	032	CARIBBEAN CRUISE	R278	3	499	499	316	"1	"1	"1	"1	746	"1	"1	"1	2657	3.2	05-Nov-06	
PR	57	033	CARIBBEAN CRUISE	R278	3	561	561	435	"1	"1	"1	"1	1013	"1	"1	"1	2670	3.2	05-Nov-06	
SC	51	031	SPRING SEAMAP	R139	3	210	210	4297	210	8920	89	1090	"1	"1	"1	"1	14977	3.0	03-Feb-04	
SC	51	032	SUMMER SEAMAP	R159	3	159	159	3690	159	8464	95	1894	"1	"1	"1	"1	14301	3.0	28-Jan-04	
SC	51	033	FALL SEAMAP	R174	3	188	188	4471	188	8900	105	1899	"1	"1	"1	"1	15908	3.0	28-Jan-04	
TX	31	031	SUMMER SEAMAP	R183	3	16	16	328	16	1807	14	106	"1	"1	"1	"1	2303	3.0	24-Mar-04	
TX	32	031	SUMMER SEAMAP	R183	3	16	16	250	16	1414	10	37	"1	"1	"1	"1	1759	3.0	30-Mar-04	
TX	33	031	SUMMER SEAMAP	R183	3	16	16	271	16	874	8	98	"1	"1	"1	"1	1299	3.0	30-Mar-04	
TX	34	031	SUMMER SEAMAP	R183	3	16	16	110	16	513	2	14	"1	"1	"1	"1	687	3.0	30-Mar-04	
TX	40	031	SUMMER SEAMAP	R183	3	16	16	213	16	1056	11	345	"1	"1	"1	"1	1673	3.0	30-Mar-04	
TX	31	032	FALL SEAMAP	R193	3	16	16	215	16	882	"1	"1	"1	"1	"1	"1	1146	3.0	01-Jul-04	
TX	32	032	FALL SEAMAP	R193	3	16	16	253	16	1040	"1	"1	"1	"1	"1	"1	1341	3.0	01-Jul-04	
TX	33	032	FALL SEAMAP	R193	3	16	16	304	16	1057	"1	"1	"1	"1	"1	"1	1409	3.0	01-Jul-04	
TX	34	032	FALL SEAMAP	R193	3	16	16	113	16	331	"1	"1	"1	"1	"1	"1	482	3.0	01-Jul-04	
TX	40	032	FALL SEAMAP	R193	3	16	16	200	16	1189	"1	"1	"1	"1	"1	"1	1437	3.0	01-Jul-04	
US	4	203	MARINE MAMMAL/ICHTHYO	R161	3	212	"1	"1	107	"1	"1	"1	116	425	"1	"1	744	3.0	16-Nov-03	
US	4	204	ICHTHYOPLANKTON MAMMALS	R176	3	274	"1	"1	180	"1	"1	"1	121	367	1267	2108	4236	3.0	20-Sep-05	
US	4	205	SUMMER SEAMAP	R187	3	298	277	6899	222	40984	178	5495	"1	41	122	"1	84445	3.0	06-May-04	
US	4	207	FALL ICHTHYOPLANKTON	R192	3	11	"1	"1	11	"1	"1	"1	10	30	"1	"1	52	3.0	31-May-04	
US	4	208	FALL GROUND/FISH	R196	3	303	285	7624	245	46394	"1	"1	"1	36	106	"1	84859	3.1	15-Jul-04	
US	28	034	SPRING ICHTHYOPLANKTON	R189	3	91	"1	"1	82	"1	"1	"1	"1	82	235	1088	1840	3944	3.0	20-Sep-05
US	28	035	REEFFISH TV/ICHTHYOPLANKTON	R179	3	213	185	89	180	"1	"1	"1	387	28	107	"1	1161	3.0	16-Feb-04	
US	28	036	FALL ICHTHYOPLANKTON	R187	3	162	"1	"1	159	"1	"1	"1	"1	72	216	"1	537	3.0	04-May-04	
VI	58	031	VIRGIN ISL REEF/FISH 1993	R220	3	15	15	"1	"1	"1	"1	"1	"1	"1	"1	"1	30	3.1	23-May-05	
VI	59	032	VIRGIN ISL REEF/FISH 1993	R220	3	30	30	8	"1	"1	"1	"1	9	"1	"1	"1	77	3.1	19-May-05	
VI	60	032	REEFFISH SURVEY	R209	3	24	24	43	"1	"1	"1	"1	92	"1	"1	"1	183	3.1	10-Nov-04	

TOTAL STATUS CODES: 4997 3998 36344 2277 164930 591 13403 4997 695 1975 2363 4008 239673

\*1 NOT TAKEN  
 2 ENTERED IN P.C.  
 3 ENTERED ON MIAMI UNSYS A10 SYSTEM(VERIFIED AND DATA BASED)

SEAMAP 1994

DATA SOURCE	VESSEL	CRUISE	CRUISE REPORT TITLE	ARCHIVE DISK #	STATUS	INVENTORY	BIOLOGICAL STATION	SPECIES	ENVIRONMENTAL	GENERAL LF	SHRIMP LF STATION	LF MERISTICS	ICHTHYOPLANKTON STATION	SAMPLE	SPECIES	LF	TOTAL SEAMAP VERSION	DATE DBASED	
AL	23	041	SUMMER SEAMAP	R200	3	6	6	223	6	1570	5	202	*1	*1	*1		2024	3.1	08-Nov-04
AL	23	042	FALL ICHTHYOPLANKTON	R222	3	9	9	*1	9	*1	*1	*1	*1	9	9		27	3.1	17-Jul-05
AL	23	043	FALL SEAMAP	R224	3	6	8	159	8	1036	*1	*1	*1	*1	*1	*1	1219	3.1	26-Jun-05
AL	23	044	TRAPVIDEO	R230	3	11	11	25	11	*1	*1	*1	379	*1	*1	*1	437	3.1	04-Aug-05
FL	36	041	SPRING ICHTHYOPLANKTON	R201	3	5	5	*1	5	*1	*1	*1	*1	5	15		25	3.1	19-Oct-04
FL	36	042	FALL ICHTHYOPLANKTON	R200	3	29	29	*1	29	*1	*1	*1	*1	29	67		145	3.1	18-Feb-05
LA	35	040	COMPARATIVE TOW	R196	3	49	49	1433	11	398	42	298	*1	*1	*1	*1	2250	3.1	21-Sep-04
LA	35	041	SPRING SEAMAP	R196	3	31	24	697	31	9424	23	153	*1	7	19		10402	3.1	21-Sep-04
LA	35	042	SUMMER SEAMAP	R215	3	31	24	539	31	6411	17	485	*1	7	21		7539	3.1	28-Apr-05
LA	35	043	FALL SEAMAP	R215	3	31	24	588	31	5943	23	439	*1	7	21		7100	3.1	28-Apr-05
LA	35	044	WINTER SEAMAP	R215	3	24	20	485	24	4253	20	571	*1	4	10		5367	3.1	28-Apr-05
MS	17	040	COMPARATIVE TOW	R196	3	49	49	1427	*1	496	*1	*1	*1	*1	*1	*1	2021	3.0	21-Sep-04
MS	17	041	SUMMER SEAMAP	R217	3	39	37	993	39	8131	28	923	*1	2	6		10196	3.1	17-May-05
MS	17	042	REEFFISH SURVEY	R214	3	9	9	20	9	*1	*1	*1	99	*1	*1	*1	146	3.1	07-Apr-05
MS	17	043	FALL ICHTHYOPLANKTON	R227	3	47	47	*1	47	*1	*1	*1	*1	47	51		146	3.1	25-Jul-05
MS	17	044	FALL ICHTHYOPLANKTON	R227	3	2	2	*1	2	*1	*1	*1	*1	2	6		10	3.1	25-Jul-05
MS	17	045	FALL GROUND FISH	R214	3	23	23	562	12	4204	*1	*1	*1	*1	*1	*1	4824	3.1	07-Apr-05
PR	56	041	CARIBBEAN SURVEY	R257	3	170	170	237	*1	*1	*1	*1	775	*1	*1	*1	1352	3.2	03-Jul-06
PR	57	042	CARIBBEAN SURVEY	R277	3	499	499	336	*1	*1	*1	*1	698	*1	*1	*1	2032	3.2	05-Nov-06
PR	57	043	CARIBBEAN SURVEY	R277	3	565	565	699	*1	*1	*1	*1	1943	*1	*1	*1	3722	3.2	05-Nov-06
SC	51	041	SPRING SEAMAP	R191	3	210	210	4051	210	7228	52	454	*1	*1	*1	*1	12415	3.1	21-Sep-04
SC	51	042	SUMMER SEAMAP	R199	3	156	156	3360	156	7227	56	1109	*1	*1	*1	*1	12220	3.1	13-Oct-04
SC	51	043	FALL SEAMAP	R206	3	188	188	5319	188	11833	116	2903	*1	*1	*1	*1	20735	3.1	18-Feb-05
TX	31	041	SUMMER SEAMAP	R223	3	18	18	200	18	1278	6	70	*1	*1	*1	*1	1802	3.1	21-Jun-05
TX	32	041	SUMMER SEAMAP	R223	3	18	18	199	18	1124	8	34	*1	*1	*1	*1	1413	3.1	21-Jun-05
TX	33	041	SUMMER SEAMAP	R223	3	18	18	147	18	353	5	35	*1	*1	*1	*1	588	3.1	21-Jun-05
TX	34	041	SUMMER SEAMAP	R223	3	18	18	127	18	675	10	117	*1	*1	*1	*1	977	3.1	21-Jun-05
TX	40	041	SUMMER SEAMAP	R223	3	18	18	129	18	698	5	28	*1	*1	*1	*1	878	3.1	21-Jun-05
TX	31	042	FALL SEAMAP	R223	3	18	18	270	18	1519	*1	*1	*1	*1	*1	*1	1637	3.1	21-Jun-05
TX	32	042	FALL SEAMAP	R223	3	18	18	251	18	1456	*1	*1	*1	*1	*1	*1	1755	3.1	21-Jun-05
TX	33	042	FALL SEAMAP	R223	3	18	18	140	18	538	*1	*1	*1	*1	*1	*1	729	3.1	21-Jun-05
TX	34	042	FALL SEAMAP	R223	3	18	18	121	18	525	*1	*1	*1	*1	*1	*1	694	3.1	21-Jun-05
TX	40	042	FALL SEAMAP	R223	3	18	18	146	18	562	*1	*1	*1	*1	*1	*1	758	3.1	21-Jun-05
US	4	209	SPRING ICHTHYOPLANKTON	R201	3	217	217	*1	155	*1	*1	*1	*1	122	505		877	3.1	13-Oct-04
US	4	210	SUMMER SEAMAP	R210	3	273	248	6212	239	42521	193	5352	*1	42	125		56161	3.1	16-Feb-05
US	4	214	FALL GROUND FISH	R216	3	288	253	7781	251	51577	*1	*1	*1	48	144		60294	3.1	18-May-05
US	28	044	ICHTHYOPLANKTON SURVEY	R201	3	60	60	*1	60	*1	*1	*1	*1	60	173		293	3.1	19-Oct-04
US	28	045	REEFFISH SURVEY	R212	3	191	180	111	159	291	*1	*1	432	30	115		1459	3.1	23-Mar-05
US	28	048	FALL ICHTHYOPLANKTON	R213	3	121	121	*1	88	*1	*1	*1	*1	88	264		473	3.1	23-Mar-05
VI	59	041	VIRGIN ISL REEFFISH 1994	R220	3	88	88	38	*1	*1	*1	*1	63	*1	*1	*1	277	3.1	18-May-05
VI	60	041	REEFFISH SURVEY	R346	3	34	34	62	*1	*1	*1	*1	167	*1	*1	*1	287	3.1	09-Nov-04
<b>TOTAL</b>						<b>3655</b>	<b>3045</b>	<b>37057</b>	<b>1973</b>	<b>171241</b>	<b>609</b>	<b>13123</b>	<b>4456</b>	<b>509</b>	<b>1571</b>		<b>236730</b>		

STATUS CODES:

\*1 NOT TAKEN  
 2 ENTERED IN P.C.  
 3 ENTERED ON MIAMI UNISYS A10 SYSTEM(VERIFIED AND DATA BASED)

## Attachment 10

## SEAMAP 1985

DATA	VESSEL	CRUISE	CRUISE REPORT TITLE	ARCHIVE DISK #	STATUS	INVENTORY	BIOLOGICAL STATION	SPECIES	ENVIRONMENTAL	GENERAL LF	SHRIMP LF STATION	LF MERISTICS	ICHTHYOPLANKTON STATION SAMPLE	SPECIES	LF	TOTAL SEAMAP VERSION	DATE DBASED		
AL	23	950	TRAPVIDEO	R275	3	12	12	21	12	*1	*1	*1	231	*1	*1	*1	288	3.2	18-Oct-85
AL	23	951	SUMMER SEAMAP	R288	3	10	10	205	10	1440	10	318	*1	*1	*1	*1	2001	3.2	01-Aug-86
AL	23	952	FALL ICHTHYOPLANKTON	R288	3	9	*1	*1	9	*1	*1	*1	9	9	*1	*1	27	3.2	01-Aug-86
AL	23	953	WINTER SEAMAP	R288	3	6	6	127	6	942	*1	*1	*1	*1	*1	*1	1087	3.2	01-Aug-86
FL	26	951	SPRING ICHTHYOPLANKTON	R231	3	15	*1	*1	15	*1	*1	*1	15	45	*1	*1	75	3.1	04-Aug-85
FL	26	952	FALL ICHTHYOPLANKTON	R240	3	25	*1	*1	25	*1	*1	*1	25	74	*1	*1	124	3.2	01-Mar-86
LA	35	951	SPRING SEAMAP	R352	3	31	24	534	31	5361	20	186	*1	7	21	*1	6188	3.2	30-Jul-86
LA	35	952	SUMMER SEAMAP	R353	3	25	18	404	25	5024	15	352	*1	7	21	*1	5894	3.2	30-Jul-86
LA	35	953	FALL SEAMAP	R354	3	31	24	385	31	3316	19	271	*1	7	21	*1	4088	3.2	30-Jul-86
MS	17	951	SUMMER SEAMAP	R246	3	40	38	1126	40	9015	34	1051	*1	2	6	*1	11350	3.2	23-May-86
MS	17	952	FALL ICHTHYOPLANKTON	R280	3	49	*1	*1	49	*1	*1	*1	49	64	*1	*1	162	3.2	07-Oct-86
MS	17	953	TRAPVIDEO	R248	3	6	8	5	8	29	*1	*1	*1	*1	*1	*1	58	3.2	23-May-86
MS	17	954	FALL SEAMAP	R248	3	28	25	531	28	3103	*1	*1	*1	1	3	*1	3714	3.2	23-May-86
PR	57	952	CARIBBEAN SURVEY	R286	3	350	350	308	*1	*1	*1	1127	*1	*1	*1	*1	2135	3.2	08-Nov-86
SC	51	951	SPRING SEAMAP	R226	3	210	210	4896	210	10439	92	987	*1	*1	*1	*1	16844	3.1	25-Jul-85
SC	51	952	SUMMER SEAMAP	R237	3	158	158	4075	158	11806	95	2053	*1	*1	*1	*1	18487	3.2	01-Mar-86
SC	51	953	FALL SEAMAP	R238	3	188	188	4229	188	9895	99	2206	*1	*1	*1	*1	16883	3.2	12-Mar-86
TX	31	951	SUMMER SEAMAP	R259	3	16	16	233	16	1184	6	55	*1	*1	*1	*1	1828	3.2	30-Jul-86
TX	31	953	TRAPVIDEO	R345	3	2	2	6	*1	41	*1	*1	*1	*1	*1	*1	51	3.2	31-Dec-85
TX	32	951	SUMMER SEAMAP	R259	3	16	16	372	16	2821	15	385	*1	*1	*1	*1	3421	3.2	30-Jul-86
TX	33	951	SUMMER SEAMAP	R259	3	16	16	175	16	486	7	22	*1	*1	*1	*1	718	3.2	30-Jul-86
TX	34	951	SUMMER SEAMAP	R259	3	16	16	149	16	507	6	11	*1	*1	*1	*1	723	3.2	30-Jul-86
TX	40	951	SUMMER SEAMAP	R259	3	16	16	161	16	796	11	352	*1	*1	*1	*1	1368	3.2	30-Jul-86
TX	31	952	FALL SEAMAP	R280	3	16	16	237	16	780	*1	*1	*1	*1	*1	*1	1085	3.2	24-Jul-86
TX	32	952	FALL SEAMAP	R280	3	16	16	287	16	1581	*1	*1	*1	*1	*1	*1	1916	3.2	24-Jul-86
TX	33	952	FALL SEAMAP	R280	3	16	16	206	16	943	*1	*1	*1	*1	*1	*1	1187	3.2	24-Jul-86
TX	34	952	FALL SEAMAP	R280	3	16	16	162	16	756	*1	*1	*1	*1	*1	*1	988	3.2	24-Jul-86
TX	40	952	FALL SEAMAP	R280	3	16	16	120	16	363	*1	*1	*1	*1	*1	*1	531	3.2	24-Jul-86
US	4	218	SPRING ICHTHYOPLANKTON	R279	3	309	*1	*1	286	*1	*1	*1	286	778	*1	*1	1353	3.2	18-Oct-85
US	4	217	SUMMER SEAMAP	R242	3	233	220	6353	203	45116	172	7538	*1	21	62	*1	68897	3.2	20-Mar-86
US	4	219	FALL SEAMAP	R241	3	249	234	7114	208	48287	*1	*1	*1	23	64	*1	84156	3.2	11-Apr-86
US	28	954	REEF SURVEY	R298	3	165	133	69	127	*1	*1	*1	191	31	59	*1	744	3.2	28-Sep-86
US	28	955	FALL ICHTHYOPLANKTON	R248	3	110	*1	*1	107	*1	*1	*1	*1	110	285	*1	802	3.2	31-May-86
TOTAL						2419	1618	32310	1912	161803	603	15745	1548	573	1512		218671		

## STATUS CODES:

\*1 NOT TAKEN  
 2 ENTERED IN P.C.  
 3 ENTERED ON MIAMI UNISYS A10 SYSTEM(VERIFIED AND DATA BASED)

SEAMAP 1996

DATA	VESSEL	CRUISE	CRUISE REPORT TITLE	ARCHIVE DISK #	STATUS	INVENTORY	BIOLOGICAL STATION	SPECIES	ENVIRONMENTAL	GENERAL L/F	SHRIMP L/F STATION	L/F MERISTICS	ICHTHYOPLANKTON			TOTAL SEAMAP	DATE			
													STATION	SAMPLE	SPECIES	L/F	VERSION	DBASED		
AL	23	061	SUMMER SEAMAP	R310	3	10	10	278	10	1995	5	40	*1	*1	*1	*1	*1	2348	3.3	29-Sep-97
AL	23	062	ICHTHYOPLANKTON	R311	3	9	*1	*1	9	*1	*1	*1	*1	9	9			27	3.3	29-Sep-97
AL	23	063	FALL SEAMAP	R312	3	7	7	188	7	1396	*1	*1	*1	*1	*1	*1	*1	1805	3.3	29-Sep-97
AL	23	064	TRAP/VIDEO	R313	3	7	7	10	7	*1	*1	*1	165	*1	*1	*1	*1	198	3.3	29-Sep-97
FL	28	061	SPRING ICHTHYOPLANKTON	R293	3	18	*1	*1	18	*1	*1	*1	*1	18	54			90	3.2	29-Jan-97
FL	26	062	SUMMER PLANKTON	R300	3	19	*1	*1	19	*1	*1	*1	*1	19	57			95	3.3	13-May-97
LA	35	060	WINTER SEAMAP	R267	3	31	24	462	31	4915	23	426	*1	7	19			5931	3.2	19-Aug-96
LA	35	061	SUMMER SEAMAP	R265	3	30	24	399	30	4339	12	360	*1	6	18			5212	3.2	27-Nov-96
LA	35	062	FALL SEAMAP	R291	3	31	24	333	31	2972	13	70	*1	7	21			3495	3.2	27-Jan-97
LA	35	063	WINTER SEAMAP	R302	3	31	24	617	31	6395	24	586	*1	7	20			7728	3.3	20-May-97
MS	17	061	SUMMER SEAMAP	R284	3	40	38	925	40	7102	28	642	*1	2	6			8821	3.2	27-Nov-96
MS	17	062	ICHTHYOPLANKTON	R296	3	46	*1	*1	46	*1	*1	*1	*1	46	53			145	3.3	05-May-97
MS	17	063	FALL SEAMAP	R299	3	29	27	463	29	2480	*1	*1	*1	2	6			3014	3.3	05-May-97
SC	51	061	SPRING SEAMAP	R270	3	210	210	2615	210	7502	37	219	*1	*1	*1	*1	*1	11003	3.2	11-Jul-96
SC	51	062	SUMMER SEAMAP	R290	3	156	156	4053	156	10559	102	2059	*1	*1	*1	*1	*1	17241	3.2	15-Jan-97
SC	51	063	FALL SEAMAP	R295	3	188	188	6390	188	14853	149	4297	*1	*1	*1	*1	*1	26253	3.2	29-Jan-97
TX	31	061	SUMMER SEAMAP	R307	3	16	16	230	16	896	9	69	*1	*1	*1	*1	*1	1252	3.3	30-Jun-97
TX	32	061	SUMMER SEAMAP	R307	3	16	16	267	16	1423	14	74	*1	*1	*1	*1	*1	1826	3.3	30-Jun-97
TX	33	061	SUMMER SEAMAP	R307	3	16	16	152	16	489	6	16	*1	*1	*1	*1	*1	711	3.3	30-Jun-97
TX	34	061	SUMMER SEAMAP	R307	3	16	16	146	16	867	9	52	*1	*1	*1	*1	*1	1122	3.3	30-Jun-97
TX	40	061	SUMMER SEAMAP	R307	3	16	16	156	16	812	8	89	*1	*1	*1	*1	*1	1113	3.3	30-Jun-97
TX	31	062	FALL SEAMAP	R308	3	16	16	199	16	1133	*1	*1	*1	*1	*1	*1	*1	1380	3.3	30-Jun-97
TX	32	062	FALL SEAMAP	R308	3	16	16	285	16	1367	*1	*1	*1	*1	*1	*1	*1	1700	3.3	30-Jun-97
TX	33	062	FALL SEAMAP	R308	3	16	16	161	16	631	*1	*1	*1	*1	*1	*1	*1	840	3.3	30-Jun-97
TX	34	062	FALL SEAMAP	R308	3	16	16	162	16	562	*1	*1	*1	*1	*1	*1	*1	772	3.3	02-Jul-97
TX	40	062	FALL SEAMAP	R308	3	16	16	244	16	1477	*1	*1	*1	*1	*1	*1	*1	1769	3.3	30-Jun-97
US	4	220	SPRING ICHTHYOPLANKTON	R281	3	172	*1	*1	165	*1	*1	*1	*1	172	506			843	3.2	18-Oct-96
US	4	221	SUMMER GROUND FISH	R283	3	255	236	6027	215	41026	173	4999	*1	22	66			52997	3.2	27-Nov-96
US	4	223	GEAR COMPARISON	R289	3	83	63	1428	*1	2457	*1	*1	*1	*1	*1	*1	*1	4011	3.2	08-Jan-97
US	4	224	FALL SEAMAP	R288	3	270	243	7454	221	50421	*1	*1	*1	43	129			58738	3.2	15-Jan-97
US	28	064	REEFFISH	R294	3	255	254	71	251	1	*1	*1	225	*1	*1	*1	*1	1057	3.2	28-Oct-97
US	28	065	FALL ICHTHYOPLANKTON	R287	3	90	*1	*1	90	*1	*1	*1	*1	90	270			450	3.2	15-Jan-97
US	28	067	WINTER PLANKTON	R301	3	73	*1	*1	71	*1	*1	*1	*1	73	238			382	3.3	05-May-97
TOTAL						2200	1685	33715	2035	188050	612	13998	523	1472				224167		

## STATUS CODES:

\*1 NOT TAKEN  
 2 ENTERED IN P.C.  
 3 ENTERED ON MIAMI UNISYS A10 SYSTEM(VERIFIED AND DATA BASED)

## SEAMAP 1997

DATA	VESSEL	CRUISE	CRUISE REPORT TITLE	ARCHIVE DISK #	STATUS	INVENTORY	BIOLOGICAL STATION	SPECIES	ENVIRONMENTAL	GENERAL L/F	SHRIMP L/F STATION	L/F MERISTICS	ICHTHYOPLANKTON STATION	SAMPLE	SPECIES	L/F	TOTAL SEAMAP VERSION	DATE DBASED	
AL	23	071	SUMMER SEAMAP	R333	3	8	6	171	8	1316	6	118	"1	"1	"1	"1	1635	3.5	28-Jul-98
AL	23	072	ICHTHYOPLANKTON	R334	3	9	"1	"1	9	"1	"1	"1	"1	9	9	"1	127	3.5	28-Jul-98
AL	23	073	TRAP VIDEO	R349	3	10	10	17	10	"1	"1	"1	"1	76	"1	"1	23	3.5	10-Aug-98
AL	23	074	FALL SEAMAP	R335	3	8	8	139	8	751	"1	"1	"1	"1	"1	"1	914	3.5	28-Jul-98
FL	26	071	SPRING ICHTHYOPLANKTON	R321	3	18	"1	"1	18	"1	"1	"1	"1	18	54	"1	90	3.3	13-Jan-98
FL	26	072	FALL ICHTHYOPLANKTON	R343	3	20	"1	"1	17	"1	"1	"1	"1	19	57	"1	94		02-Oct-98
LA	35	071	SPRING SEAMAP	R317	3	31	24	509	31	7168	15	188	"1	7	21	"1	7987	3.3	22-Oct-97
LA	35	072	FALL SEAMAP	R327	3	31	24	433	31	3378	22	488	"1	7	21	"1	4428	3.3	03-Feb-98
LA	35	073	FALL SEAMAP	R328	3	31	24	570	31	5862	23	324	"1	7	21	"1	6886	3.3	24-Feb-98
MS	17	071	SUMMER SEAMAP	R318	3	41	39	868	41	6150	32	822	"1	2	6	"1	7969	3.3	25-Nov-97
MS	17	072	ICHTHYOPLANKTON	R337	3	46	"1	"1	46	"1	"1	"1	"1	46	58	"1	150	3.5	27-Jul-98
MS	17	073	FALL SEAMAP	R348	3	31	28	577	31	3748	"1	"1	"1	2	6	"1	4421	3.5	27-Jul-98
SC	51	071	SPRING SEAMAP	R323	3	210	210	4652	210	9942	108	1274	"1	"1	"1	"1	18806	3.3	15-Sep-97
SC	51	072	SUMMER SEAMAP	R315	3	158	158	2688	154	8763	63	1477	"1	"1	"1	"1	11457	3.3	28-Oct-97
SC	51	073	FALL SEAMAP	R322	3	188	188	3245	188	4155	69	1245	"1	"1	"1	"1	9278	3.3	21-Jan-98
TX	31	071	SUMMER SEAMAP	R321	3	16	16	251	16	1229	13	57	"1	"1	"1	"1	1598	3.3	24-Feb-98
TX	32	071	SUMMER SEAMAP	R321	3	16	16	267	16	1730	12	102	"1	"1	"1	"1	2159	3.3	24-Feb-98
TX	33	071	SUMMER SEAMAP	R321	3	16	16	192	16	534	9	34	"1	"1	"1	"1	817	3.3	24-Feb-98
TX	34	071	SUMMER SEAMAP	R321	3	16	16	112	16	507	5	24	"1	"1	"1	"1	696	3.3	04-Mar-98
TX	40	071	SUMMER SEAMAP	R321	3	16	16	157	16	620	10	318	"1	"1	"1	"1	1153	3.3	24-Feb-98
TX	31	072	FALL SEAMAP	R332	3	16	16	257	16	1022	"1	"1	"1	"1	"1	"1	1327	3.3	16-Apr-98
TX	32	072	FALL SEAMAP	R332	3	16	16	302	16	1457	"1	"1	"1	"1	"1	"1	1807	3.3	16-Apr-98
TX	33	072	FALL SEAMAP	R332	3	16	16	204	16	752	"1	"1	"1	"1	"1	"1	1004	3.3	16-Apr-98
TX	34	072	FALL SEAMAP	R332	3	16	16	241	16	1086	"1	"1	"1	"1	"1	"1	1355	3.3	16-Apr-98
TX	40	072	FALL SEAMAP	R332	3	16	16	180	16	899	"1	"1	"1	"1	"1	"1	927	3.3	16-Apr-98
US	4	225	SEAMAP ICHTHYOPLANKTON	R319	3	205	"1	"1	188	"1	"1	"1	"1	187	559	"1	952	3.3	13-Jan-98
US	4	226	SUMMER SEAMAP	R325	3	256	217	5950	215	40109	173	5366	"1	47	141	"1	52429	3.3	04-Jan-98
US	4	229	FALL SEAMAP	R338	3	256	238	6576	214	42879	"1	"1	"1	21	57	"1	50220	3.5	08-Aug-98
US	28	074	REEFFISH	R316	3	303	302	35	303	"1	"1	"1	"1	152	"1	"1	1095	3.3	22-Oct-97
US	28	075	SEAMAP ICHTHYOPLANKTON	R320	3	123	"1	"1	94	"1	"1	"1	"1	123	335	"1	552	3.3	13-Jan-98
TOTAL						2143	1636	28593	2007	141837	560	11837	228	495	1345		190186		

\*1 NOT TAKEN  
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## SEAMAP 1998

DATA	VESSEL	CRUISE	CRUISE REPORT TITLE	ARCHIVE DISK #	STATUS	INVENTORY	BIOLOGICAL STATION	SPECIES	ENVIRONMENTAL	GENERAL L/F	SHRIMP L/F STATION	L/F MERISTICS	ICHTHYOPLANKTON STATION	SAMPLE	SPECIES	L/F	TOTAL SEAMAP VERSION	DATE DBASED	
AL	23	061	SUMMER SEAMAP		3	8	8	174	8	969	4	43	"1	"1	"1	"1	1234	3.3	23-Mar-99
AL	23	062	FALL ICHTHYOPLANKTON		3	9	"1	"1	9	"1	"1	"1	"1	9	9	"1	27	3.3	23-Mar-99
AL	23	063	FALL SEAMAP		3	8	8	259	8	1920	"1	"1	"1	"1	"1	"1	2203	3.3	11-Mar-99
FL	26	061	SUMMER ICHTHYOPLANKTON		3	17	"1	"1	17	"1	"1	"1	"1	17	51	"1	85	3.3	14-Apr-99
LA	35	061	SPRING SEAMAP	R342	3	31	24	410	31	5726	18	370	"1	7	18	"1	8628	3.3	31-Aug-98
LA	35	062	SPRING SEAMAP		3	30	24	537	30	4189	23	525	"1	6	18	"1	5376		22-Nov-98
LA	35	063	FALL SEAMAP	R380	3	31	24	514	31	4390	22	493	"1	7	21	"1	5526		25-Jan-98
MS	17	061	SPRING SEAMAP	R352	3	41	39	969	41	6033	32	983	"1	2	6	"1	8024		02-Oct-98
MS	17	062	FALL ICHTHYOPLANKTON		3	45	"1	"1	44	"1	"1	"1	"1	45	51	"1	140		02-Feb-99
MS	17	063	FALL SEAMAP		3	24	22	568	24	3715	"1	"1	"1	2	6	"1	4357		25-Jan-99
SC	51	061	SPRING SEAMAP	R347	3	210	210	4345	210	12781	117	1700	"1	"1	"1	"1	19573	3.3	13-Aug-98
SC	51	062	SUMMER SEAMAP	R344	3	155	155	3809	155	10103	"1	"1	"1	"1	"1	"1	14377	3.3	22-Sep-98
SC	51	063	FALL SEAMAP	R361	3	188	188	4700	188	11899	97	1851	"1	"1	"1	"1	19109		25-Jan-99
TX	31	061	SUMMER SEAMAP	R357	3	16	16	274	16	1318	14	263	"1	"1	"1	"1	1917		15-Oct-98
TX	31	062	FALL SEAMAP		3	16	16	270	16	1248	"1	"1	"1	"1	"1	"1	1566	3.3	14-Apr-99
TX	32	061	SUMMER SEAMAP	R357	3	16	16	216	16	1120	12	124	"1	"1	"1	"1	1520		15-Oct-98
TX	32	062	FALL SEAMAP		3	16	16	197	16	1056	"1	"1	"1	"1	"1	"1	1301	3.3	14-Apr-99
TX	33	061	SUMMER SEAMAP	R357	3	16	16	172	16	703	7	139	"1	"1	"1	"1	1099		15-Oct-98
TX	33	062	FALL SEAMAP		3	16	16	210	16	877	"1	"1	"1	"1	"1	"1	935	3.3	14-Apr-99
TX	34	061	SUMMER SEAMAP	R357	3	16	16	211	16	958	15	291	"1	"1	"1	"1	1523		15-Oct-98
TX	34	062	FALL SEAMAP		3	16	16	182	16	859	"1	"1	"1	"1	"1	"1	869	3.3	14-Apr-99
TX	40	061	SUMMER SEAMAP	R357	3	16	16	276	16	1527	16	544	"1	"1	"1	"1	2414		28-Oct-98
TX	40	062	FALL SEAMAP		3	16	16	210	16	977	"1	"1	"1	"1	"1	"1	1235	3.3	14-Apr-99
US	4	230	SUMMER SEAMAP	R359	3	195	194	5006	183	33707	171	5839	"1	1	3	"1	45368		25-Jan-99
US	4	231	LONGLINE SHARK		3	216	216	922	206	"1	"1	"1	"1	"1	"1	"1	1560		25-Jan-99
US	4	232	FALL SEAMAP		3	220	206	5099	211	40086	"1	"1	"1	15	43	"1	48767	3.3	23-Jun-99
US	28	064	SPRING ICHTHYOPLANKTON		3	157	"1	"1	157	"1	"1	"1	"1	156	454	"1	768		25-Jan-99
US	63	061	ICHTHYO MAMMAL ATLANTIC	R362	3	43	"1	"1	43	"1	"1	"1	"1	42	134	"1	220		25-Jan-99
TOTAL						1746	1464	29695	1712	142872	544	13205					192192		

\*1 NOT TAKEN  
2 ENTERED IN P.C.  
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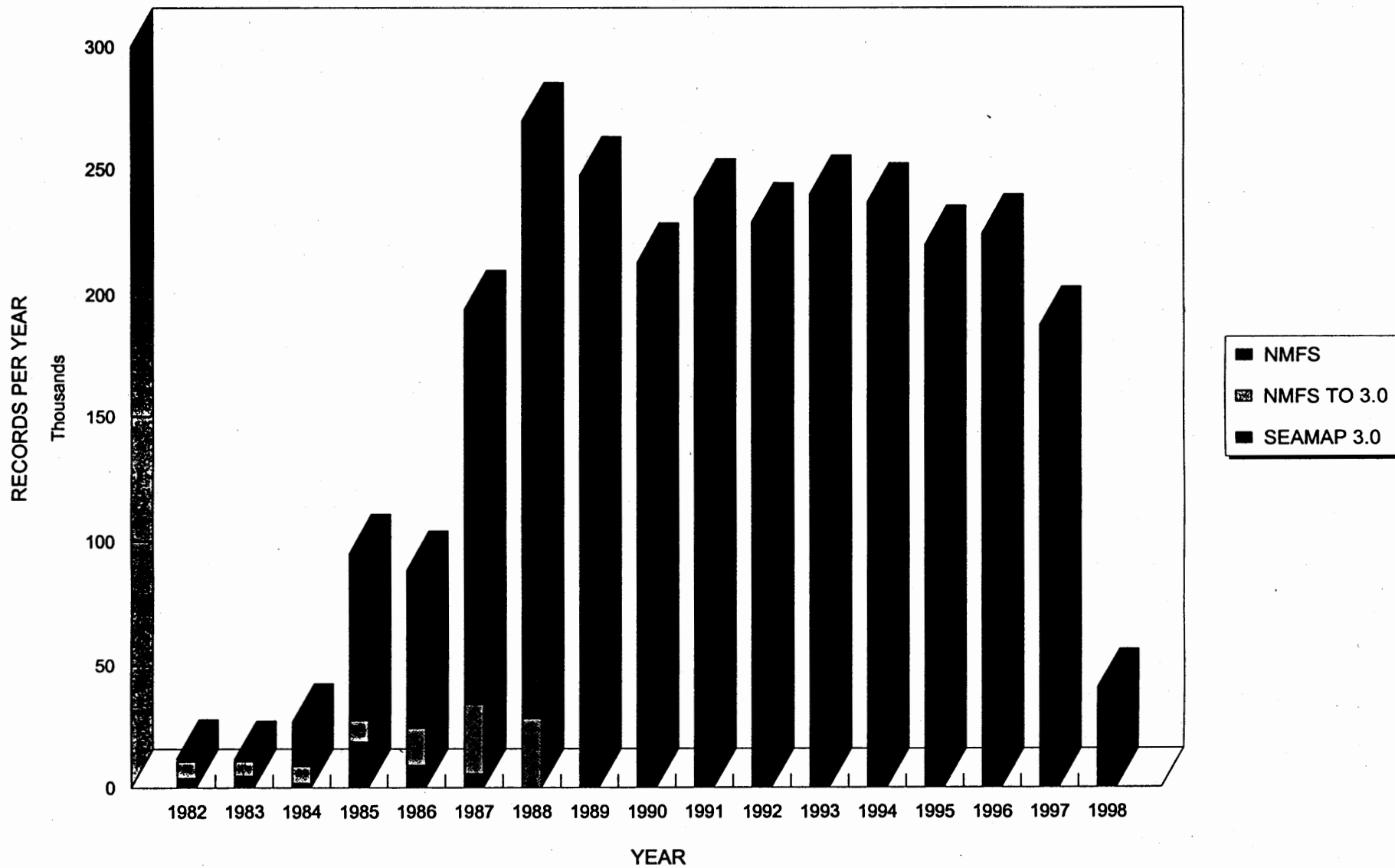
Attachment 13

SEAMAP 1999

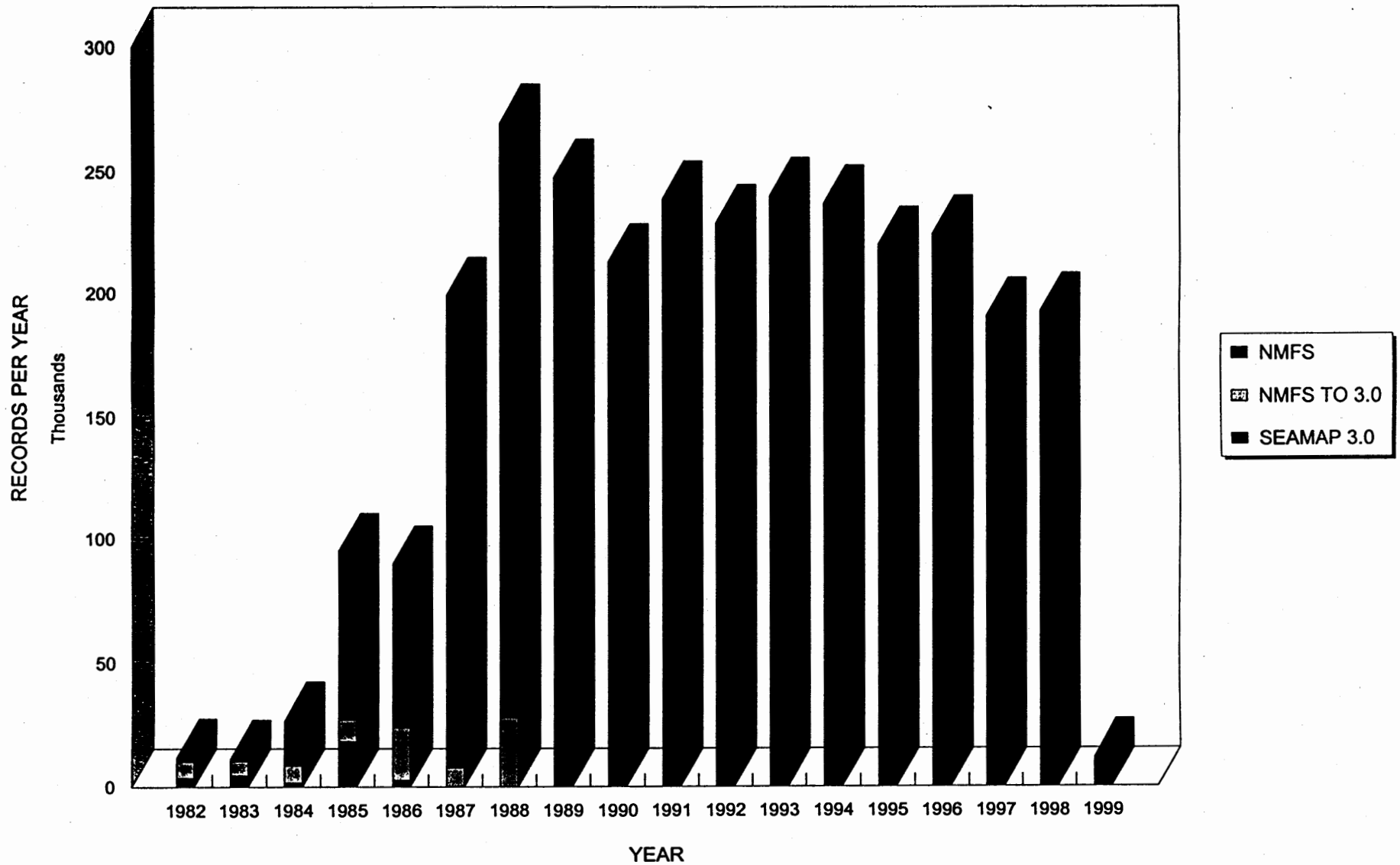
DATA	VESSEL	CRUISE	CRUISE REPORT TITLE	ARCHIVE DISK #	STATUS	INVENTORY	BIOLOGICAL STATION	SPECIES	ENVIRONMENTAL	GENERAL L/F	SHRIMP L/F STATION	L/F MERISTICS	ICHTHYOPLANKTON STATION	SAMPLE	SPECIES	L/F	TOTAL SEAMAP VERSION	DATE DBASED		
SC	51	002	SUMMER SEAMAP		3	156	156	3160	156	6570	67	990	486	*1	*1	*1	*1	11741	3.3	07-Oct-99
<b>TOTAL</b>						2813	2318	46071	2748	228033	813	20872					305642			

\*1 NOT TAKEN  
 2 ENTERED IN P.C.  
 3 ENTERED ON MIAMI UNISYS A10 SYSTEM(VERIFIED AND DATA BASED)

# SEAMAP TOTAL RECORDS



# SEAMAP TOTAL RECORDS



DATA TYPE	YEAR	DATA SOURCE	VESSEL	CRUISE	CRUISE SUM	CRUISE REPORT TITLE	ARCHIVE DISK #	AJ	STATUS	ENVIRONMENTAL			GENERAL LIF		SHRIMP LIF		MERISTICS		ICHTHYOPLANKTON				TOTALS		SEAMAP VERSION	DATE OBASED		
										INV	STATION	SPECIES	INV	INV	STATION	LIF	MERISTICS	STATION	SAMPLE	SPECIES	LIF	BYTES	TOTAL					
RES	80	US	4	112	1	SUMMER GROUNDFINSH		DH	3	801	811	13802	235											15448	4	28-Apr-99		
	<b>80 Total</b>				1				3	801	811	13802	235												15448	4	28-Apr-99	
RES	81	US	4	122	1	RESOURCE SURVEYS CRUISE D4122	40131	DH	3	837	737	15146													18720	4	17-Feb-99	
	<b>81 Total</b>				1				3	837	737	15146														18720	4	17-Feb-99
RES	82	US	4	130	1	FALL SHRIMP AND BOTTOMFISH		DH	3	948	819	15008	364							99	824	947	84398		18710	4	19-May-99	
	<b>82 Total</b>				1				3	948	819	15008	364							99	824	947	84398		18710	4	19-May-99	
RES	83	US	28	833	1	SMALL PELAGIC SURVEY	40127	RB	3	88	68	960	68	12957											14121	4	16-Feb-99	
	<b>83 Total</b>				1		40128	RB	3	88	100	1385	89	16595											18227	4	16-Feb-99	
RES	84	US	4	212	1	MARINE MAMMAL GDM	40090	RB	3	100			56												156	4	30-Nov-98	
	<b>84 Total</b>				2		40091	RB	3	100	99	1850	89	18490											21438	4	30-Nov-98	
RES	85	US	4	215	1	MAMMAL CRUISE CARIBBEAN N. ATLANTIC	40048	RB	3	48			42												80	4	02-Nov-98	
	<b>85 Total</b>				2		40056	RB	3	48	82	172	81												758	4	02-Nov-98	
RES	86	US	4	218	1	SHARK SURVEY GULF OF MEXICO		RB	3	82	108	1348	97	14204											15883	4	26-Oct-98	
	<b>86 Total</b>				1		40057	RB	3	108	45	104	45												505	4	14-Oct-98	
RES	87	US	4	222	1	LOWLINE SHARK GULFIATLANTIC 98	40038	RB	3	151	151	202	151	14											523	4	10-Aug-98	
	<b>87 Total</b>				1		40019	RB	3	151	3	3	8												7	4	23-Sep-98	
RES	88	US	28	863	1	GROUPEL SPAMMING	40021	RB	3	36	76	75	75												228	4	10-Jul-98	
	<b>88 Total</b>				1		40028	RB	3	77	106	1368	95	10320							8	24			11890	4	22-Jul-98	
RES	89	US	4	227	1	OCULINA SHARK SURVEY GULF OF MEXICO		AJ	3	258	258	425	258												1033	4	19-May-99	
	<b>89 Total</b>				1		40134	AJ	3	258	87	32	2												239	4	12-May-99	
RES	90	US	4	227	1	SMALL PELAGIC 1987 GULF OF MEXICO		AJ	3	118	62	531	47	5340												6488	4	12-May-99
	<b>90 Total</b>				3				9	636	408	1388	308	5340							0	0	0	0	0	8972	4	12-May-99
RES	91	US	4	892	1	OCULINA SHARK SURVEY 1999		AJ	3	134	134	103	45	2												450	4	12-May-99
	<b>91 Total</b>				1				3	134	134	103	45	2							0	0	0	0	0	450	4	12-May-99
RES Total					19				57	4393	3747	52417	1886	78523							107	848	947	84398		148340	4	17-Feb-99
SEA	81	US	4	118	1	SUMMER GROUNDFINSH SURVEY	40130	DH	3	227	227	2930	0												3384	4	17-Feb-99	
	<b>81 Total</b>				1				3	227	227	2930	0												3384	4	17-Feb-99	
SEA	82	MS	17	821	1	SUMMER SEAMAP 1982 MS		AJ	3	21	21	415	20	1365											1842	4	15-Sep-98	
	<b>82 Total</b>				2		40132	DH	3	21	202	5391	244								70	210	1722	2607	177278	10387	4	11-Mar-99
SEA	84	MS	17	841	1	SUMMER SEAMAP MS 1984		AJ	3	42	223	5806	284	1365							70	210	1722	2607	177278	12339	4	15-Sep-98
	<b>84 Total</b>				1				3	24	24	357	24	0							6	185	0	0	0	800	4	15-Sep-98
SEA	86	MS	17	863	1	SUMMER SEAMAP MS '863		AJ	3	14	14	412	12	824												800	4	30-Sep-98
	<b>86 Total</b>				1				3	14	14	412	12	824												1254	4	30-Sep-98
SEA	86	SC	51	861	1	SPRING SEAMAP SOUTH ATLANTIC MS '86		AJ	3	68	68	1641	68	18326												18171	4	21-Jul-99
	<b>86 Total</b>				1				3	68	22	532	44	2683												4082	4	18-Aug-99
SEA	86	SC	51	863	1	FALL SEAMAP SOUTH ATLANTIC '86		AJ	2	80	70	1792	70	8865												11867	4	21-Jul-99
	<b>86 Total</b>				1				3	70	8	213	8								8	328				573	4	23-Jun-99
SEA	86	TX	31	861	1	SEAMAP SUMMER TX VES 31		AJ	3	8	8	141	8													394	4	23-Jun-99
	<b>86 Total</b>				1				3	8	8	157	8													637	4	23-Jun-99
SEA	86	TX	32	861	1	SEAMAP SUMMER TX VES 32		AJ	3	8	8	141	8													394	4	23-Jun-99
	<b>86 Total</b>				1				3	8	8	157	8													637	4	23-Jun-99
SEA	86	TX	34	861	1	SEAMAP SUMMER TX VES 34		AJ	3	8	8	132	8													483	4	23-Jun-99
	<b>86 Total</b>				8				23	1045	207	5020	228	29498							45	1380	0	0	0	37341	4	23-Jun-99
SEA	87	MS	17	871	1	SPRING SEAMAP MS '87		AJ	3	53	53	1348		4310												5785	4	30-Sep-99
	<b>87 Total</b>				1				3	52	52	1882	52	6919												9057	4	07-Jul-99
SEA	87	SC	51	872	1	SUMMER SEAMAP SOUTH ATLANTIC		AJ	3	52	52	1771	52	4847												8774	4	07-Jul-99
	<b>87 Total</b>				1				3	52	94	2177	94	5269												7608	4	07-Jul-99
SEA	87	SC	51	874	1	SOUTH ATLANTIC SEAMAP FALL 87		AJ	3	54	52	2033	52	5455												7644	4	07-Jul-99
	<b>87 Total</b>				1				3	52	16	203	16	877												1285	4	10-Jun-99
SEA	87	TX	31	871	1	SEAMAP SUMMER TX VES 31		AJ	3	16	16	245	16	1183												1458	4	10-Jun-99
	<b>87 Total</b>				1				2	16	16	201	16	943												1341	4	10-Jun-99
SEA	87	TX	32	871	1	SEAMAP SUMMER TX VES 32		AJ	3	16	16	221	16	895												1124	4	10-Jun-99
	<b>87 Total</b>				1				3	16	16	94	16	282							3	3				440	4	10-Jun-99
SEA	87	TX	33	871	1	SUMMER SEAMAP TX VES 33		AJ	3	16	16	104	16	191												343	4	10-Jun-99
	<b>87 Total</b>				1				3	16	16	258	16	1180							14	297				1795	4	10-Jun-99
SEA	87	TX	34	871	1	SEAMAP SUMMER TX VES 34		AJ	3	16	16	152	16	824												824	4	10-Jun-99
	<b>87 Total</b>				1				3	16	16	99	16	279							9	73				508	4	10-Jun-99
SEA	87	TX	40	871	1	SEAMAP SUMMER TX VES 40		AJ	3	16	16	238	16	1131												1415	4	10-Jun-99

DATA TYPE	YEAR	DATA SOURCE	VESSEL	CRUISE	CRUISE SUM	CRUISE REPORT TITLE	ARCHIVE DISK #	AJ	STATUS	ENVIRONMENTAL			SHRIMP LF		MERISTICS	ICHTHYOPLANKTON				TOTALS	SEAMAP VERSION	DATE DROPPED					
										INV	STATION	SPECIES	INV	STATION		LF	STATION	SAMPLE	SPECIES				LF	BYTES	TOTAL		
SEA	88	SC	51	881	1	SOUTH ATLANTIC SEAMAP 88		AJ	3	52	82	1582	32	4096							5794	4	07-Jul-98				
SEA	88	SC	51	882	1	SOUTH ATLANTIC SEAMAP 88		AJ	3	52	82	1801	50	5518								7473	4	07-Jul-98			
SEA	88	SC	51	883	1	SOUTH ATLANTIC SEAMAP 88		AJ	3	52	82	2022	44	8235								11405	4	07-Jul-98			
SEA	88	SC	51	884	1	SOUTH ATLANTIC SEAMAP 88		AJ	3	52	82	1849	52	7234								8339	4	07-Jul-98			
SEA	88	SC	51	885	1	SOUTH ATLANTIC SEAMAP 88		AJ	3	52	82	2308	52	8807								11271	4	07-Jul-98			
SEA	88	SC	51	886	1	SOUTH ATLANTIC SEAMAP 88		AJ	3	52	82	2150	52	7501								9807	4	07-Jul-98			
SEA	88	SC	51	887	1	SOUTH ATLANTIC SEAMAP 88		AJ	3	52	82	2188	52	8533								8975	4	07-Jul-98			
SEA	88	SC	51	888	1	SOUTH ATLANTIC SEAMAP 88		AJ	3	52	82	2310	42	7552								10008	4	07-Jul-98			
SEA	88	TX	31	881	1	FALL SEAMAP TX VES 31		AJ	3	52	18	344	18	1708	13	442						2553	4	10-Jun-98			
SEA	88	TX	31	882	1	FALL SEAMAP TX VES 31		AJ	3	16	18	78	18	180								284	4	10-Jun-98			
SEA	88	TX	31	883	1	FALL SEAMAP TX VES 32		AJ	3	16	18	289	18	1312	10	184						1853	4	10-Jun-98			
SEA	88	TX	32	881	1	FALL SEAMAP TX VES 32		AJ	3	16	18	225	18	869								1242	4	10-Jun-98			
SEA	88	TX	32	882	1	FALL SEAMAP TX VES 33		AJ	3	16	18	117	18	330	5	13						513	4	10-Jun-98			
SEA	88	TX	33	881	1	FALL SEAMAP TX VES 33		AJ	3	16	18	247	18	1003								1298	4	10-Jun-98			
SEA	88	TX	33	882	1	FALL SEAMAP TX VES 34		AJ	3	16	18	144	18	844	8	41						885	4	10-Jun-98			
SEA	88	TX	34	881	1	FALL SEAMAP TX VES 34		AJ	3	16	18	210	18	920								1178	4	10-Jun-98			
SEA	88	TX	34	882	1	FALL SEAM AP TX VES 40		AJ	3	16	18	239	18	805	16	249						1457	4	10-Jun-98			
SEA	88	TX	40	881	1	FALL SEAM AP TX VES 40		AJ	3	16	18	131	18	481								840	4	17-Jun-98			
SEA	88	TX	40	882	1	FALL SEAMAP TX VES 40		AJ	3	16	18	131	18	481								840	4	17-Jun-98			
<b>88 Total</b>						18				54	812	578	18320	538	84888	52	929	0	0	0	0	0	85875				
SEA	88	SC	51	881	1	SEAMAP SOUTH ATLANTIC 88		AJ	3	212	212	7890	212	12944	179	2289						23748	4	19-Jun-98			
SEA	88	SC	51	882	1	SEAMAP SOUTH ATLANTIC SUMMER 88		AJ	3	212	108	2893	108	5830	48	808						8797	4	19-Jun-98			
SEA	88	SC	51	883	1	SEAMAP SOUTH ATLANTIC FALL 88		AJ	3	106	212	5753	212	9372	116	1902						17770	4	07-Jul-98			
SEA	88	TX	31	881	1	SUMMER SEAMAP TX VES 31		AJ	3	212	18	174	18	575	9	115						821	4	28-May-98			
SEA	88	TX	31	882	1	FALL SEAMAP TX VES 31		AJ	3	16	18	189	18	582								820	4	28-May-98			
SEA	88	TX	32	881	1	SUMMER SEAMAP TX VES 32		AJ	3	16	18	323	18	1991	13	709						3084	4	28-May-98			
SEA	88	TX	32	882	1	FALL SEAMAP TX VES 32		AJ	3	16	18	307	18	1826								2181	4	28-May-98			
SEA	88	TX	33	881	1	SUMMER SEAMAP TX VES 33		AJ	3	16	18	354	18	1985	18	548						2920	4	28-May-98			
SEA	88	TX	33	882	1	FALL SEAMAP TX VES 33		AJ	3	16	18	312	18	1421								1781	4	28-May-98			
SEA	88	TX	34	881	1	SUMMER SEAMAP TX VES 34		AJ	3	16	18	288	18	1481	16	651						2484	4	01-Jun-98			
SEA	88	TX	34	882	1	FALL SEAMAP TX VES 34		AJ	3	16	18	204	18	1112								1384	4	28-May-98			
SEA	88	TX	40	881	1	SUMMER SEAMAP TX VES 40		AJ	3	16	18	205	18	1035	15	382						1685	4	01-Jun-98			
SEA	88	TX	40	882	1	FALL SEAMAP TX VES 40		AJ	3	16	18	283	18	1482								1773	4	28-May-98			
SEA	88	US	4	180	1	1889 SEAMAP SUMMER SHRIMP/GROUNDFISH	40145	RB	3	16	237	4178	72	29040	140	4818			63		533	842	57296	4	21-Sep-98		
SEA	88	US	4	184	1	1888 GROUNDFISH SURVEY	40142	RB	3	244	490	11997	229	88970								1118	1729	117572	4	15-Sep-98	
<b>88 Total</b>						15				45	1148	1417	34920	991	134708	552	12228	8	102	117	1851	2571	174828	180337			
SEA	90	MS	17	903	1	FALL SEAMAP MS '90		AJ	3	24	24	727	20	4470								5285	4	30-Sep-98			
SEA	90	SC	51	901	1	SPRING SOUTH ATLANTIC SEAMAP 1990		AJ	3	210	210	4529	208	15747	80	702						21888	4	01-Jul-98			
SEA	90	SC	51	902	1	SUMMER SOUTH ATLANTIC 91		AJ	3	210	158	4552	158	14080	81	1432						20803	4	01-Jul-98			
SEA	90	SC	51	903	1	FALL SEAMAP SOUTH ATLANTIC 90		AJ	3	158	182	6041	182	12663	128	2884						22282	4	01-Jul-98			
SEA	90	TX	31	901	1	SUMMER SEAMAP TX VES 31		AJ	3	182	18	128	18	458	9	89						710	4	25-May-98			
SEA	90	TX	31	902	1	FALL SEAMAP TX VES 31		AJ	3	16	18	127	18	288								483	4	25-May-98			
SEA	90	TX	32	901	1	SUMMER SEAMAP TX VES 32		AJ	3	16	18	287	18	1589	10	427						2321	4	25-May-98			
SEA	90	TX	32	902	1	FALL SEAMAP TX VS 32		AJ	3	16	18	244	18	894								1186	4	25-May-98			
SEA	90	TX	33	901	1	SUMMER SEAMAP TX VES 33		AJ	3	16	18	289	18	1605	14	205						2181	4	25-May-98			
SEA	90	TX	33	902	1	FALL SEAMAP TX VES 33		AJ	3	16	18	146	18	487								881	4	25-May-98			
SEA	90	TX	34	901	1	SUMMER SEAMAP TX VES 34		AJ	3	16	18	125	18	806	5	101						885	4	25-May-98			
SEA	90	TX	34	902	1	FALL SEAMAP TX VS 34		AJ	3	16	18	99	18	496								843	4	25-May-98			
SEA	90	TX	40	901	1	SUMMER SEAMAP TX VES 40		AJ	3	16	18	120	18	786	7	218						1179	4	25-May-98			
SEA	90	TX	40	902	1	FALL SEAMAP TX VS 40		AJ	3	16	18	187	18	872								1117	4	25-May-98			
SEA	90	US	4	188	1	1890 SPRING SHRIMP/GROUNDFISH	40139	RB	3	16	287	5818	230	34305	218	8031			18		57	390	852	44336	48080	4	03-Jun-98
SEA	90	US	4	191	1	1890 SEAMAP GROUNDFISH	40141	RB	3	290	290	6725	218	39457			2		39		117	1241	2842	179658	50882	4	21-Sep-98
<b>90 Total</b>						16				48	1232	1289	29835	1174	128771	543	12089	2	56	174	1831	3284	223982	180184			
SEA	91	MS	17	913	1	FALL SEAMAP MS '91		AJ	3	27	27	857	27	4652								5390	4	30-Sep-98			
SEA	91	SC	51	911	1	SPRING SEAMAP SOUTH ATLANTIC 91		AJ	3	210	210	8022	210	15930	108	1931						24821	4	23-Jun-98			
SEA	91	SC	51	912	1	SUMMER SEAMAP SOUTH ATLANTIC 91		AJ	3	210	158	3979	158	12688	75	1155						18385	4	30-Jun-98			
SEA	91	SC	51	913	1	FALL SEAMAP SOUTH ATLANTIC 91		AJ	3	158	172	4732	172	12249	89	2081						19657	4	30-Jun-98			
SEA	91	TX	31	911	1	SUMMER SEAMAP TX 1991		AJ	3	172	18	250	18	1354	10	78						1738	4	25-May-98			
SEA	91	TX	31	912	1	FALL SEAMAP TX VES 31 19992		AJ	3	16	18	16	154	839								841	4	17-Jun-98			
SEA	91	TX	32	911	1	SUMMER SEAMAP VES 32 1991		AJ	3	16	18	270	18	1406	13	156						1883	4	25-May-98			
SEA	91	TX	32	912	1	FALL SEAMAP TX VES 1992		AJ	3	16	18	238	18	1015								1296	4	17-Jun-98			
SEA	91	TX	33	911	1	SUMMER SEAMAP VES 1991		AJ	3	16	18	182	18	586	10	99						835	4	25-May-98			
SEA	91	TX	33	912	1	FALL SEAMAP TX VES 1992		AJ	3	16	18	112	18	352								512	4	17-Jun-98			
SEA	91	TX	34	911	1	SUMMER SEAMAP VES 1991		AJ	3	16	18	138	18	681	9	48						824	4	25-May-98			
SEA	91	TX	34	912	1	FALL SEAMAP TX VES 1992		AJ	3	16	18	148	18	563								756	4	17-Jun-98			
SEA	91	TX	40	911	1	SUMMER SEAMAP VES 1991		AJ	3	16	18	187	18	891	12	182						1320	4	25-May-98			
SEA	91	TX	40	912	1	FALL SEAMAP TX VES 1992		AJ	3	16	18	137	18	545								730	4	17-Jun-98			
SEA	91	US	4	197	1	SEAMAP FALL BOTTOMFISH SURVEY		RB	3	16	241	7388	241	42639					40		120	1352	3332	478476	65330	4	28-May-98
<b>91 Total</b>						15				45	835	966	24455	1104	86200	338	5708	0		40							

DATA TYPE	YEAR	DATA SOURCE	VESSEL	CRUISE	CRUISE SUM	CRUISE REPORT TITLE	ARCHIVE DISK #	AJ	STATUS	ENVIRONMENTAL			GENERAL LF		SHRIMP LF		MERISTICS		ICHTHYOPLANKTON				TOTALS		SEAMAP VERSION	DATE DBASED	
										INV	STATION	SPECIES	INV	INV	STATION	LF	MERISTICS	STATION	SAMPLE	SPECIES	LF	BYTES	TOTAL				
SEA	92	AL	23	920	1	TRAP VIDEO ALABAMA 1992 REEFISH		AJ	3	7	7	3					20						37	4	30-Sep-98		
SEA	92	AL	23	921	1	SUMMER SEAMAP AL 1992		AJ	3	16	16	332	13	2058	6	78							2620	4	19-May-98		
SEA	92	AL	23	923	1	FALL SEAMAP ALA 1992		AJ	3	8	8	193	8	1098									1316	4	30-Sep-98		
SEA	92	MS	17	921	1	SPRING SEAMAP MS 1992		AJ	3	16	16	13	16	48									106	4	19-May-98		
SEA	92	MS	17	924	1	FALL SEAMAP MS 1992		AJ	3	15	15	335	15	2445									2825	4	30-Sep-98		
SEA	92	SC	51	921	1	SOUTH ATLANTIC SEAMAP SPRING		AJ	3	15	210	5045	210	13987	95	1053							20780	4	01-Jul-98		
SEA	92	SC	51	922	1	SEAMAP SOUTH ATLANTIC SUMMER		AJ	3	210	156	3801	156	8568	50	537							13424	4	01-Jul-98		
SEA	92	SC	51	923	1	SOUTH ATLANTIC SEAMAP SUMMER		AJ	3	156	188	4958	188	9892	89	1188							18501	4	19-Aug-98		
SEA	92	TX	31	921	1	SUMMER SEAMAP		AJ	3	188	16	168	18	827	12	158							1214	4	19-May-98		
SEA	92	TX	31	922	1	FALL SEAMAP		AJ	3	16	16	227	16	1141									1418	4	19-May-98		
SEA	92	TX	32	921	1	SUMMER SEAMAP TX VES 32		AJ	3	16	16	197	16	1043	7	34							1329	4	19-May-98		
SEA	92	TX	32	922	1	FALL SEAMAP		AJ	3	16	16	281	16	1855									1894	4	19-May-98		
SEA	92	TX	33	921	1	SUMMER SEAMAP TX VES 33		AJ	3	16	16	195	16	805	7	23							1078	4	19-May-98		
SEA	92	TX	33	922	1	FALL SEAMAP		AJ	3	16	16	160	16	454									682	4	19-May-98		
SEA	92	TX	33	923	1	SUMMER SEAMAP TX VES 34		AJ	3	16	16	158	16	788	12	90							1077	4	19-May-98		
SEA	92	TX	34	922	1	FALL SEAMAP		AJ	3	16	16	270	16	1442									1780	4	19-May-98		
SEA	92	TX	34	923	1	SUMMER SEAMAP		AJ	3	16	16	147	16	727	8	63							864	4	19-May-98		
SEA	92	TX	40	922	1	SUMMER SEAMAP		AJ	3	16	16	193	16	910									1151	4	19-May-98		
SEA	92	US	4	200	1	1992 SEAMAP SUMMER GROUND FISH	40144	RB	3	16	280	8763	221	38987	174	3463			41	120	1820	4558	851794	57453	4	18-Sep-98	
SEA	92	US	4	202	1	SEAMAP FALL BOTTOM FISH SURVEY	40143	RB	3	284	273	7061	220	43848					80	1014	2134			54851	4	08-Sep-98	
SEA	92	VI	58	922	1	VIRGIN ISLANDS REEF FISH 1992	40119	RB	3	284	83	85											330	4	04-Feb-98		
SEA	92	VI	58	922	1	VIRGIN ISLANDS REEF FISH	40120	RB	3	83	16	12											111	4	04-Feb-98		
<b>92 Total</b>					22					86	1432	1388	30607	1207	131487	461	8688	174		131	1137	3754	4558	851794	182950		
SEA	93	AL	23	930	1	COMPARATIVE TOW	40088	RB	3	22	22	484	18	441									867	4	18-Nov-98		
SEA	93	AL	23	931	1	SUMMER SEAMAP SURVEY	40089	RB	3	22	10	212	10	953	5	95								1295	4	18-Nov-98	
SEA	93	AL	23	932	1	FALL ICHTHYOPLANKTON SURVEY	40100	RB	3	10		8											27	4	18-Nov-98		
SEA	93	AL	23	933	1	FALL SEAMAP SURVEY	40101	RB	3	9	8	189	8	1108										1334	4	18-Nov-98	
SEA	93	LA	35	933	1	FALL PLANKTON SEAMAP	40133	RB	3	9	24	501	29	5012	19	414			7	21	178	624	947	8853	4	29-Apr-99	
SEA	93	MS	17	930	1	SEAMAP COMPARATIVE CRUISE	40087	RB	3	31	22	551		408										1004	4	18-Nov-98	
SEA	93	MS	17	931	1	TRAP VIDEO SURVEY	40089	RB	3	22	8	2	8											30	4	11-Jan-99	
SEA	93	MS	17	932	1	SUMMER SEAMAP	40129	RB	3	8	35	808	37	7420	29	832								9543	4	12-May-99	
SEA	93	MS	17	933	1	FALL ICHTHYOPLANKTON	40102	RB	3	37		48												144	4	11-Jan-99	
SEA	93	MS	17	935	1	FALL GROUND FISH SURVEY	40105	RB	3	48	25	888	27	4713										5895	4	11-Jan-99	
SEA	93	PR	58	931	1	CARIBBEAN CRUISE 1993		RB	3	27	800	468												2983	4	18-Feb-99	
SEA	93	PR	58	932	1	CARIBBEAN CRUISE 1993	40126	RB	3	800	583	468												2700	4	15-Feb-99	
SEA	93	PR	57	932	1	CARIBBEAN SURVEY	40125	RB	3	563	496	318												2057	4	18-Feb-99	
SEA	93	PR	57	933	1	CARIBBEAN SURVEY	40123	RB	3	499	581	435												2570	4	18-Feb-99	
SEA	93	SC	51	931	1	SOUTH ATLANTIC SPRING 1993 SEAMAP	40103	RB	3	561	210	4287	210	8920	80	1080								14877	4	26-Aug-99	
SEA	93	SC	51	932	1	SUMMER SEAMAP SOUTH ATLANTIC	40104	RB	3	210	156	3880	156	8484	85	1804								14301	4	26-Aug-99	
SEA	93	SC	51	933	1	FALL SEAMAP 1993 SOUTH ATLANTIC	40111	RB	3	156	188	4471	188	8800	105	1868								15808	4	26-Aug-99	
SEA	93	TX	31	931	1	TX 931 ARANSAS SUMMER SEAMAP	40082	RB	3	188	18	328	18	1807	14	108								2303	4	18-Nov-98	
SEA	93	TX	31	932	1	FALL SEAMAP	40108	RB	3	18	18	215	18	882										1145	4	11-Jan-99	
SEA	93	TX	32	931	1	TX 931 MATAGORDA SUMMER SEAMAP	40012	RB	3	18	18	248	18	1414	10	37								1758	4	18-Nov-98	
SEA	93	TX	32	932	1	FALL SEAMAP	40108	RB	3	18	18	253	18	1040										1341	4	11-Jan-99	
SEA	93	TX	33	931	1	TX 931 LAGUNA MADRE SUMMER SEAMAP	40082	RB	3	18	18	287	18	874	8	98								1295	4	18-Nov-98	
SEA	93	TX	33	932	1	FALL SEAMAP	40108	RB	3	18	18	304	18	1057										1459	4	11-Jan-99	
SEA	93	TX	34	931	1	TX 931 GALVESTON SUMMER SEAMAP	40082	RB	3	18	18	110	18	513	2	14								887	4	10-Dec-98	
SEA	93	TX	34	932	1	FALL SEAMAP	40105	RB	3	18	18	113	16	331										482	4	11-Jan-99	
SEA	93	TX	40	921	1	TX 931 SABINE SUMMER SEAMAP	40082	RB	3	18	18	213	18	1056	11	345								1873	4	18-Nov-98	
SEA	93	TX	40	932	1	FALL SEAMAP	40108	RB	3	18	18	200	18	1188										1437	4	11-Jan-99	
SEA	93	VI	58	931	1	1993 VIRGIN ISLANDS REEF FISH	40117	RB	3	15	15													30	4	04-Feb-98	
SEA	93	VI	58	932	1	VIRGIN ISLANDS REEF FISH	40118	RB	3	15	30	8												82	4	04-Feb-98	
<b>93 Total</b>					29					87	3187	3134	19818	908	56223	348	8483	4175		88	90	295	925	10802	95700		

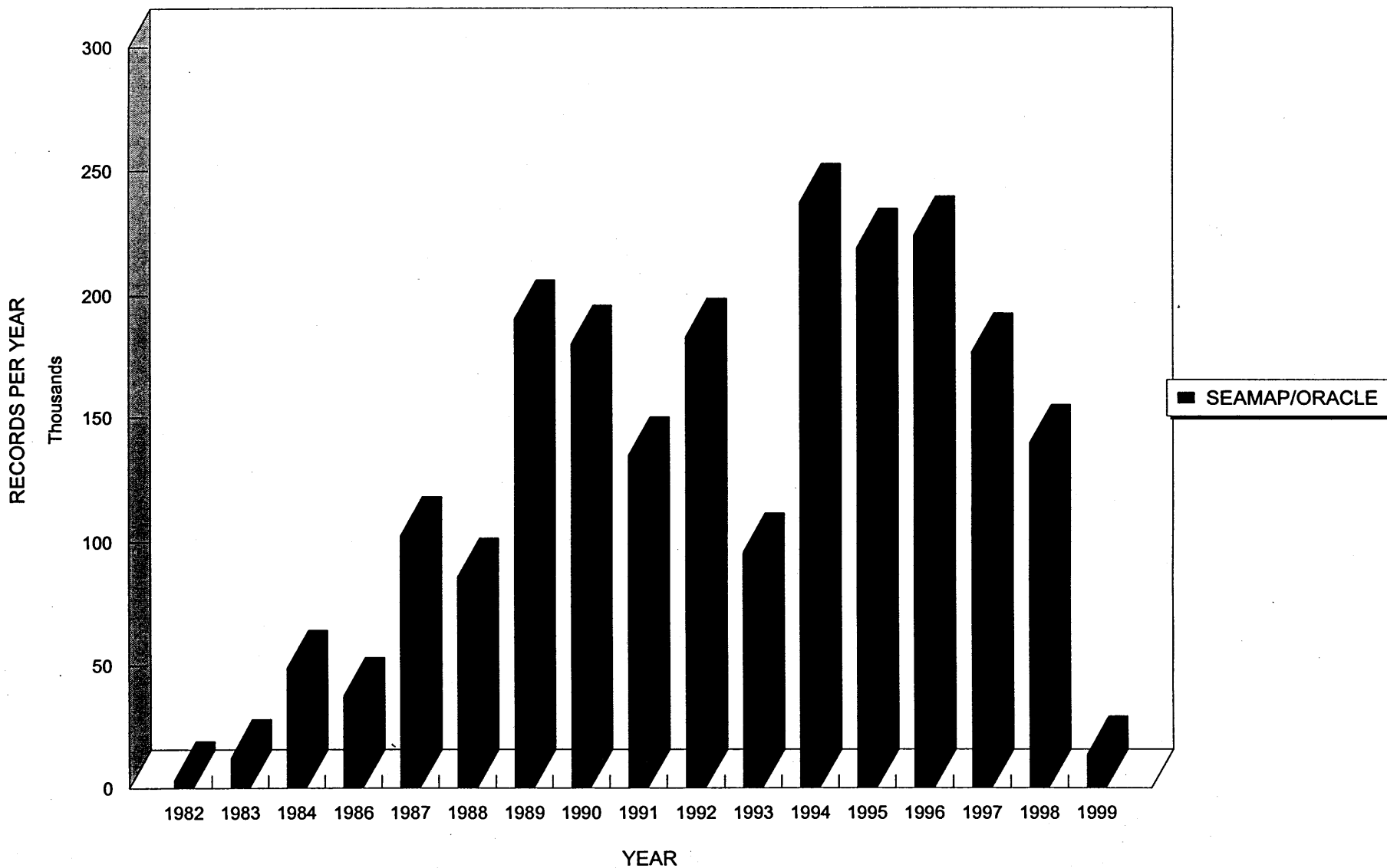
DATA TYPE	YEAR	DATA SOURCE	VESSEL	CRUISE	CRUISE SUM	CRUISE REPORT TITLE	ARCHIVE DISK #	AJ	STATUS	ENVIRONMENTAL			SHRIMP UF		MERISTICS	ICHTHYOPLANKTON				TOTALS	SEAMAP VERSION	DATE DRAISED						
										INV	STATION	SPECIES	INV	UF		STATION	UF	STATION	SAMPLE				SPECIES	UF	BYTES			
SEA	04	AL	23	041	1	SUMMER SEAMAP	40058	RB	3	8	8	223	8	1570	5	202						2024	4	09-Nov-98				
SEA	04	AL	23	043	1	FALL SEAMAP 1994	40075	RB	3	8	8	158	8	1036									1218	4	30-Nov-98			
SEA	04	FL	36	041	1	SEAMAP ICHTHYOPLANKTON	40114	RB	3	8								5	15				35	4	04-Feb-99			
SEA	04	FL	36	042	1	ACI FALL 1994 ICHTHYOPLANKTON	40080	RB	3	5								29	87				145	4	18-Nov-98			
SEA	04	LA	35	040	1	COMPARATIVE SURVEY	40081	RB	3	29	48	1433	11	398	42	288							2250	4	30-Nov-98			
SEA	04	LA	35	041	1	SPRING SEAMAP	40082	RB	3	48	24	897	31	8424	23	152							10402	4	30-Nov-98			
SEA	04	LA	35	042	1	1994 SUMMER SEAMAP	40083	RB	3	31	24	538	31	8411	17	485							7638	4	18-Nov-98			
SEA	04	LA	35	043	1	1994 FALL SEAMAP	40084	RB	3	31	24	588	31	5843	23	438							7100	4	18-Nov-98			
SEA	04	LA	35	044	1	1994 WINTER SEAMAP	40085	RB	3	31	20	465	24	4253	20	571							5387	4	11-Jan-99			
SEA	04	MS	17	040	1	COMPARATIVE TOW WILA	40115	RB	3	24	48	1427		496									2021	4	04-Feb-99			
SEA	04	MS	17	041	1	MS SUMMER SEAMAP 1994	40132	RB	3	48	37	993	38	8131	28	923			2	8	73	143	947	10412	4	04-May-99		
SEA	04	MS	17	042	1	1994 MS REEFISH SURVEY	40077	RB	3	39	9	20	9			99							148	4	09-Nov-98			
SEA	04	MS	17	043	1	FALL ICHTHYOPLANKTON MS 1994	40130	RB	3	9				47					47	51	43	187	947	355	4	04-May-99		
SEA	04	MS	17	044	1	FALL ICHTHYOPLANKTON GOM	40131	RB	3	47				2					8	29		98	947	129	4	29-Apr-99		
SEA	04	MS	17	045	1	FALL GROUNDISH	40078	RB	3	2	23	562	12	4204										4824	4	18-Nov-98		
SEA	04	PR	56	041	1	CARRIBEAN 1994	40076	RB	3	23	170	237				775								1352	4	09-Nov-98		
SEA	04	PR	57	042	1	1994 CARIBBEAN SURVEY	40096	RB	3	170	499	336				888								2032	4	18-Nov-98		
SEA	04	PR	57	043	1	1994 CARIBBEAN SURVEY	40107	RB	3	499	595	889				1843								3722	4	11-Jan-99		
SEA	04	SC	51	041	1	SPRING SEAMAP 1994	40060	RB	3	595	210	4051	210	7228	52	454								12415	4	26-Aug-98		
SEA	04	SC	51	042	1	SUMMER SEAMAP 94	40061	RB	3	210	156	3360	156	7227	56	1109								12220	4	26-Aug-98		
SEA	04	SC	51	043	1	FALL SEAMAP 94	40062	RB	3	156	188	5319	188	11833	119	2903								20735	4	26-Aug-98		
SEA	04	TX	31	041	1	SUMMER SEAMAP 1994 VESSEL 31	40067	RB	3	188	16	200	16	1278	6	70								1802	4	02-Nov-98		
SEA	04	TX	31	042	1	FALL SEAMAP 1994 VESSEL 31	40073	RB	3	16	16	270	16	1519										1837	4	09-Nov-98		
SEA	04	TX	32	041	1	SUMMER SEAMAP 1994 VESSEL 32	40067	RB	3	16	16	199	16	1124	8	34								1413	4	02-Nov-98		
SEA	04	TX	32	042	1	FALL SEAMAP 1994 VESSEL 32	40073	RB	3	16	16	251	16	1456										1755	4	09-Nov-98		
SEA	04	TX	33	041	1	SUMMER SEAMAP 1994 VESSEL 33	40067	RB	3	16	16	147	16	353	5	35								588	4	02-Nov-98		
SEA	04	TX	33	042	1	FALL SEAMAP 1994 VESSEL 33	40073	RB	3	16	16	140	16	538										728	4	09-Nov-98		
SEA	04	TX	34	041	1	SUMMER SEAMAP 1994 VESSEL 34	40067	RB	3	16	16	127	16	875	10	117								877	4	02-Nov-98		
SEA	04	TX	34	042	1	FALL SEAMAP 1994 VESSEL 34	40073	RB	3	16	16	121	16	525										894	4	09-Nov-98		
SEA	04	TX	40	041	1	SUMMER SEAMAP 1994 VESSEL 40	40067	RB	3	16	16	129	16	668	5	28								878	4	11-Jan-99		
SEA	04	TX	40	042	1	FALL SEAMAP 1994 VESSEL 40	40073	RB	3	16	16	146	16	562										758	4	09-Nov-98		
SEA	04	US	4	208	1	ICHTHYOPLANKTON/MAMMAL GOM	40063	RB	3	16		155							122				505	877	4	23-Nov-98		
SEA	04	US	4	210	1	SUMMER GROUNDISH SURVEY GOM	40068	RB	3	217	248	8212	239	42521	183	5352								42	125	55181	4	02-Nov-98
SEA	04	US	4	214	1	FALL GROUNDISH 1994	40064	RB	3	273	253	7781	251	51577										48	144	80294	4	04-Nov-98
SEA	04	US	28	044	1	BLUEFIN LARVAL FISH SURVEY	40093	RB	3	288		80												60	173	283	4	20-Jan-99
SEA	04	US	28	045	1	REEF FISH SURVEY GOM 1994	40065	RB	3	60	180	111	159	291		432							30	115	1458	4	10-Oct-98	
SEA	04	US	28	046	1	SEAMAP PLANKTON SURVEY - GOM	40079	RB	3	181		88												88	264	473	4	18-Nov-98
SEA	04	VI	59	041	1	VIRGIN ISLANDS REEFISH 1994	40118	RB	3	121	88	38													63	277	4	04-Feb-99
SEA	04	VI	60	041	1	REEF FISH SURVEY	40121	RB	3	88	34	82													167	351	4	22-Feb-99
04 Total					39				117	3608	3034	37032	1863	171241	608	13123	4077		504	1585	116	406	2841	238875				

DATA TYPE	YEAR	DATA SOURCE	VESSEL	CRUISE	CRUISE SUM	CRUISE REPORT TITLE	ARCHIVE DSK #	AJ	STATUS	ENVIRONMENTAL			GENERAL LIF		SHRIMP LIF		MERISTICS		ICHTHYOPLANKTON				TOTALS		SEAMAP VERSION	DATE OBTAINED				
										INV	STATION	SPECIES	INV	LV	STATION	LV	MERISTICS	STATION	SAMPLE	SPECIES	LV	BYTES	TOTAL	SEAMAP						
SEA	95	AL	23	950	1	TRAP VIDEO 1995	40112	RB	3	12	12	21	12					231						289	4	18-Feb-99				
SEA	95	AL	23	951	1	SUMMER SEAMAP	40110	RB	3	12	10	205	10	1440	10	318								2001	4	25-Jan-99				
SEA	95	AL	23	952	1	FALL ICHTHYOPLANKTON	40037	RB	3	10													9	9	27	4	27-Jan-99			
SEA	95	AL	23	953	1	WINTER SEAMAP	40038	RB	3	9	8	127	8	942											1087	4	25-Jan-99			
SEA	95	FL	26	951	1	SEAMAP ICHTHYO FLA 95 SPRING	40042	RB	3	8			15										15	45	75	4	31-Aug-98			
SEA	95	FL	26	952	1	FALL ICHTHYOPLANKTON	40043	RB	3	15			25										25	74	124	4	31-Aug-98			
SEA	95	LA	35	951	1	LA SPRING ICHTHYOPLANKTON	40086	RB	3	25	24	534	31	5361	20	186							2	21	21	6188	4	25-Jan-99		
SEA	95	LA	35	952	1	LA SUMMER SURVEY	40087	RB	3	31	18	404	25	5024	15	352							7	21	21	5894	4	30-Nov-98		
SEA	95	LA	35	953	1	LA FALL SURVEY	40088	RB	3	25	24	385	31	3316	19	271							7	21	21	4089	4	25-Jan-99		
SEA	95	MS	17	951	1	SUMMER SEAMAP	40039	RB	3	31	38	1126	40	9015	34	105							2	8	8	10404	4	25-Jan-99		
SEA	95	MS	17	952	1	FALL ICHTHYOPLANKTON	40041	RB	3	40			49										48	84	182	4	01-Sep-98			
SEA	95	MS	17	953	1	TRAP VIDEO	40044	RB	3	48	8	5	8	29												58	4	01-Sep-98		
SEA	95	MS	17	954	1	FALL SEAMAP SURVEY	40040	RB	3	8	25	531	28	3103									1	3	3	3714	4	01-Sep-98		
SEA	95	PR	57	952	1	CARIBBEAN SURVEY	40055	RB	3	26	350	308						1127								2135	4	14-Oct-98		
SEA	95	SC	51	951	1	SPRING SEAMAP	40051	RB	3	350	210	4696	210	10436	82	887										18844	4	28-Aug-98		
SEA	95	SC	51	952	1	SUMMER SEAMAP 95 SOUTH ATLANTIC	40048	RB	3	210	156	4075	156	11806	95	2053										18487	4	07-Oct-98		
SEA	95	SC	51	953	1	FALL SEAMAP 95 SOUTH ATLANTIC	40058	RB	3	156	189	4229	188	8885	99	2206										18983	4	28-Aug-98		
SEA	95	TX	31	951	1	1995 SUMMER SEAMAP VES 31	40046	RB	3	188	18	233	18	1184	6	55										1528	4	02-Oct-98		
SEA	95	TX	31	952	1	1995 CRUISE TEXAS VESSEL 31	40047	RB	3	18	16	237	18	780												1065	4	02-Oct-98		
SEA	95	TX	31	953	1	TX TRAPVIDEO	40113	RB	3	18	2	8		41												51	4	04-Feb-99		
SEA	95	TX	32	951	1	1995 SUMMER SEAMAP VES 32	40046	RB	3	2	18	372	18	2821	15	385										3421	4	02-Oct-98		
SEA	95	TX	32	952	1	1995 CRUISE TEXAS VESSEL 32	40047	RB	3	18	16	287	18	1581												1818	4	21-Oct-98		
SEA	95	TX	33	951	1	1995 SUMMER SEAMAP VES 33	40046	RB	3	18	16	175	18	486	7	22										718	4	21-Oct-98		
SEA	95	TX	33	952	1	1995 CRUISE TEXAS VESSEL 33	40046	RB	3	18	16	206	18	943												1187	4	02-Oct-98		
SEA	95	TX	34	951	1	1995 SUMMER SEAMAP VES 34	40046	RB	3	18	16	148	18	507	8	11										723	4	21-Oct-98		
SEA	95	TX	34	952	1	1995 CRUISE TEXAS VESSEL 34	40046	RB	3	18	16	182	18	758												888	4	02-Oct-98		
SEA	95	TX	40	951	1	1995 SUMMER SEAMAP VES 40	40046	RB	3	18	16	181	18	796	11	352										1389	4	21-Oct-98		
SEA	95	TX	40	952	1	1995 CRUISE TEXAS VESSEL 40	40046	RB	3	18	16	120	18	383												631	4	02-Oct-98		
SEA	95	US	4	218	1	SPRING PLANKTON	40095	RB	3	16			266										288	778	1353	4	18-May-98			
SEA	95	US	4	217	1	SUMMER GROUND FISH	40053	RB	3	308	220	8353	203	45116	172	7538							21	62	83	58897	4	18-Oct-98		
SEA	95	US	4	218	1	FALL GROUND FISH	40050	RB	3	233	234	7114	208	46287												23	64	54158	4	02-Oct-98
SEA	95	US	28	954	1	TUNA/REEF SURVEY	40045	RB	3	248	133	88	127					191					31	59	90	744	4	02-Oct-98		
SEA	95	US	28	955	1	1995 ICHTHYOPLANKTON CRUISE		RB	3	185			107										110	285	395	557	4	02-Oct-98		
<b>95 Total</b>					<b>33</b>				<b>98</b>	<b>2321</b>	<b>1818</b>	<b>32310</b>	<b>1912</b>	<b>181803</b>	<b>603</b>	<b>14788</b>	<b>1548</b>						<b>573</b>	<b>1512</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>218780</b>		
SEA	96	AL	23	961	1	SPRING SURVEY	40001	RB	3	10	10	278	10	1895	5	40										2348	4	08-Jun-98		
SEA	96	AL	23	962	1	ALABAMA CRUISE ICHTHYO 96		RB	3	10			8													9	9	27	4	03-Jun-98
SEA	96	AL	23	963	1	ALABAMA CRUISE FALL 96		RB	3	9	7	188	7	1386													1805	4	03-Jun-98	
SEA	96	AL	23	964	1	TRAP VIDEO SURVEY	40004	RB	3	7	7	10	7					185								198	4	06-Aug-98		
SEA	96	FL	26	961	1	ICHTHYOPLANKTON SURVEY	40008	RB	3	7			18										18	54	72	90	4	28-May-98		
SEA	96	FL	26	962	1	SUMMER ICHTHYOPLANKTON	40008	RB	3	18			18										18	57	75	95	4	28-May-98		
SEA	96	LA	35	960	1	WINTER SURVEY	40024	RB	3	19	24	462	31	4815	23								7	19	19	5505	4	28-Aug-98		
SEA	96	LA	35	961	1	SUMMER SEAMAP	40013	RB	3	31	24	389	30	4338	12	360							6	18	18	5212	4	28-May-98		
SEA	96	LA	35	962	1	FALL SURVEY	40011	RB	3	30	24	333	31	2972	13	70							7	21	21	3485	4	28-May-98		
SEA	96	LA	35	963	1	FALL SURVEY	40015	RB	3	31	24	617	31	6385	24	586							7	20	20	7728	4	28-May-98		
SEA	96	MS	17	961	1	SUMMER SURVEY	40005	RB	3	31	38	825	40	7102	28	842							2	8	8	8821	4	27-May-98		
SEA	96	MS	17	962	1	ICHTHYOPLANKTON SURVEY	40008	RB	3	40			46										46	53	99	145	4	27-May-98		
SEA	96	MS	17	963	1	FALL SURVEY	40007	RB	3	46	27	463	28	2460									2	8	8	3014	4	18-May-98		
SEA	96	SC	51	961	1	SPRING SEAMAP 1996	40027	RB	3	29	210	2615	210	7502	37	218										11003	4	28-Aug-98		
SEA	96	SC	51	962	1	SUMMER SEAMAP 1996	40028	RB	3	210	156	4053	156	10568	102	2058										17241	4	28-Aug-98		
SEA	96	SC	51	963	1	FALL SEAMAP 1996	40029	RB	3	156	188	6380	188	14853	148	4287										26253	4	28-Aug-98		
SEA	96	TX	31	961	1	SUMMER SURVEY VESSEL 31	40011	RB	3	188	16	230	16	886	9	88										1252	4	18-May-98		
SEA	96	TX	31	962	1	FALL SURVEY VESSEL 31	40012	RB	3	16	16	199	16	1133												1380	4	22-Jun-98		
SEA	96	TX	32	961	1	SUMMER SURVEY VESSEL 32	40011	RB	3	16	16	287	16	1423	14	74										1828	4	18-May-98		
SEA	96	TX	32	962	1	FALL SURVEY VESSEL 32	40012	RB	3	16</																				



DATA TYPE	YEAR	DATA SOURCE	VESSEL	CRUISE	CRUISE SUM	CRUISE REPORT TITLE	ARCHIVE DISK #	AJ	STATUS	INV	STATION	SPECIES	ENVIRONMENTAL		SHRIMP L/F	MERISTICS	ICHTHYOPLANKTON				TOTALS	SEAMAP VERSION	DATE DASED								
													INV	WV			STATION	L/F	STATION	SAMPLE				SPECIES	L/F	BYTES	TOTAL				
SEA	87	AL	23	971	1	SUMMER SEAMAP AL 1997		AJ	3	8	8	171	8	1318	8	118						1638									
SEA	87	AL	23	972	1	SEAMAP ICHTHYO AL 1997		AJ	2	9										9	8		27	4	29-Apr-99						
SEA	87	AL	23	973	1	FALL SEAMAP AL		AJ	3	9	10	17	10									76	123	4	15-Apr-99						
SEA	87	RL	28	971	1	SPRING ICHTHYOPLANKTON		RB	3	10										18	54		90	4	14-Apr-99						
SEA	87	LA	35	971	1	LA SPRING SEAMAP GULF 97	40069	RB	3	18	24	509	31	7168	15	189				7	21		7987	4	02-Nov-99						
SEA	87	LA	35	972	1	LA FALL SEAMAP	40070	RB	3	31	24	433	31	3378	22	488				7	21		4428	4	02-Nov-99						
SEA	87	LA	35	973	1	LA FALL SEAMAP	40071	RB	3	31	24	570	31	5862	23	324				7	21		6886	4	28-Oct-99						
SEA	87	SC	51	971	1	SEAMAP SPRING SURVEY S. ATLANTIC	40030	RB	3	210	156	4852	210	9642	108	1274							11457	4	28-Sep-99						
SEA	87	SC	51	972	1	SEAMAP SUMMER SURVEY S. ATLANTIC	40031	RB	3	210	156	2888	154	8763	83	1477							11457	4	08-Sep-99						
SEA	87	SC	51	973	1	SEAMAP FALL SURVEY SOUTH ATLANTIC	40034	RB	3	156	188	3245	188	4155	88	1245							9278	4	15-Sep-99						
SEA	87	TX	31	971	1	SPRING SEAMAP 971	40025	RB	3	188	16	251	16	1229	13	57							1598	4	21-Jul-99						
SEA	87	TX	31	972	1	FALL SEAMAP	40035	RB	3	18	16	257	16	1022									1327	4	05-Aug-99						
SEA	87	TX	31	972	1	SPRING SEAMAP 971	40025	RB	3	18	16	267	16	1730	12	102							2156	4	23-Sep-99						
SEA	87	TX	32	972	1	FALL SEAMAP	40035	RB	3	18	16	302	16	1457									1807	4	03-Aug-99						
SEA	87	TX	32	972	1	SPRING SEAMAP 971	40025	RB	3	18	16	192	16	634	8	34							817	4	21-Jul-99						
SEA	87	TX	33	971	1	FALL SEAMAP TX 1998	40035	RB	3	18	16	204	16	752									1004	4	03-Aug-99						
SEA	87	TX	33	972	1	SPRING SEAMAP	40025	RB	3	18	16	112	16	507	5	24							898	4	21-Jul-99						
SEA	87	TX	34	971	1	FALL SEAMAP	40035	RB	3	18	16	241	16	1086									1355	4	05-Aug-99						
SEA	87	TX	34	972	1	SPRING SEAMAP	40025	RB	3	18	16	157	16	820	10	318							1153	4	21-Jul-99						
SEA	87	TX	40	971	1	FALL SEAMAP	40035	RB	3	18	16	180	16	899									927	4	06-Aug-99						
SEA	87	TX	40	972	1	SEAMAP ICHTHYOPLANKTON	40033	RB	3	16			188								187	559		952	4	22-Jul-99					
SEA	87	US	4	225	1	SUMMER GROUND FISH	40022	RB	3	205	217	5950	215	40109	173	5386							47	141	4	28-Aug-99					
SEA	87	US	4	228	1	1997 FALL GROUND FISH	40129	RB	3	258	238	8578	214	42879									21	57	4	04-Mar-99					
SEA	87	US	4	229	1	REEF FISH SURVEY	40023	RB	3	256	302	35	303												152	4	22-Sep-99				
SEA	87	US	28	974	1	ICHTHYOPLANKTON GULF SEAMAP	40068	RB	3	303			94										123	335		732	4	28-Oct-99			
SEA	87	Total			25				71	1883	1561	27009	1864	131188	528	11015							228	428	1218	0	0	0	178789		
SEA	88	AL	23	982	1	88 SUMMER SEAMAP		AJ	3	8	8	174	8	969	4	43								1234	4	14-Apr-99					
SEA	88	AL	23	982	1	FALL ICHTHYO AL 1998 GULF OF MEXICO		AJ	3	8													8	9		27	4	28-Apr-99			
SEA	88	AL	23	983	1	FALL SEAMAP AL 1998		AJ	3	9	8	258	8	1920											2203	4	28-Apr-99				
SEA	88	AL	23	984	1	TRAP VIDEO	40148	RB	3	9	8	9	8												31	4	21-Sep-99				
SEA	88	LA	35	982	1	SEAMAP LA 88		AJ	3	9	24	537	30	4189	23	525							8	18		5378	4	14-Apr-99			
SEA	88	LA	35	983	1	SEAMAP LA 98		AJ	3	30	24	514	31	4390	22	483							7	21		5628	4	14-Apr-99			
SEA	88	LA	35	983	1	SEAMAP LA 98		AJ	3	31	39	869	41	8033	32	963									2	8		8024	4	14-Apr-99	
SEA	88	MS	17	981	1	SEAMAP ICHTHYO MS 88		AJ	3	41			44											45	51		140	4	28-Apr-99		
SEA	88	MS	17	982	1	FALL SEAMAP ICHTHYOPLANKTON MS 88		AJ	3	41			44																		
SEA	88	MS	17	983	1	FALL SEAMAP MS 88		AJ	3	45	22	506	24	3715										2	8		4357	4	28-Apr-99		
SEA	88	SC	51	981	1	SPRING SEAMAP SC SOUTH ATLANTIC		AJ	3	24	210	4345	210	12781	117	1700												19573	4	17-Jun-99	
SEA	88	SC	51	982	1	SOUTH ATLANTIC SEAMAP SUMMER 1998		AJ	3	210	155	3809	153	10103														14375	4	17-Jun-99	
SEA	88	SC	51	983	1	SOUTH ATLANTIC SEAMAP FALL 1998		AJ	3	155	188	4700	186	11869	97	1851												19109	4	14-Jun-99	
SEA	88	TX	31	991	1	SUMMER SEAMAP TX VES 3198		AJ	3	188	16	274	16	1318	13	262												1815	4	12-May-99	
SEA	88	TX	31	992	1	FALL SEAMAP TEXAS 1998 VES 31		AJ	3	18	16	27	16	1246														1323	4	28-Apr-99	
SEA	88	TX	32	991	1	SEAMAP SUMMER TX VES 32 98		AJ	3	16	16	218	16	1120	12	124												1520	4	28-Apr-99	
SEA	88	TX	32	992	1	FALL SEAMAP TEXAS 1998 VES 32		AJ	3	16	16	197	16	1056														1301	4	28-Apr-99	
SEA	88	TX	33	991	1	SUMMER TX SEAMAP VESSEL 33 1998		AJ	3	16	16	172	16	703	7	139												1089	4	28-Apr-99	
SEA	88	TX	33	992	1	FALL SEAMAP TX 1998 VES 33		AJ	3	16	16	210	16	877														935	4	28-Apr-99	
SEA	88	TX	34	991	1	SUMMER SEAMAP TX 1998 VES 34		AJ	3	16	16	211	16	958	15	291												1523	4	28-Apr-99	
SEA	88	TX	34	992	1	FALL SEAMAP TEXAS 1998 VES 34		AJ	3	16	16	182	16	859														889	4	28-Apr-99	
SEA	88	TX	40	991	1	SEAMAP SUMMER TX VES 40		AJ	3	16	16	276	16	1527	16	547												2414	4	28-Apr-99	
SEA	88	TX	40	992	1	FALL SEAMAP TEXAS 1998 VES 40		AJ	3	16	16	210	16	877														1235	4	28-Apr-99	
SEA	88	US	4	230	1	SUMMER GROUND FISH 1998		AJ	3	16	194	5006	183	33707	171	5839							1	3			45218	4	14-Apr-99		
SEA	88	Total			23				88	825	1038	22763	1085	98969	529	12877							0	72	114	0	0	0	138318		
SEA	88	SC	51	992	1	SUMMER SEAMAP SOUTH ATLANTIC		AJ	3	156	156	3180	156	8570	87	990												486	4	30-Sep-99	
SEA	88	US	64	10	1	FERRELL CRUISE 1 GULF OF MEXICO		AJ	3	63	63	263	61														1155	4	19-Aug-99		
SEA	88	Total			2				8	219	219	3423	217	8570	87	890							0	0	0	0	0	0	11648		
SEA	Total				299				891	21856	19641	348642	16106	1459105	5337	112685							2591	7821	10836	18352	1762821	2032487			

# SEAMAP TOTAL RECORDS



APPROVED BY:

Harriet Perry  
COMMITTEE CHAIRMAN

**JOINT BLUE CRAB TASK FORCE AND  
TCC CRAB SUBCOMMITTEE  
MINUTES  
Tuesday, October 19, 1999  
Biloxi, Mississippi**

Subcommittee Chair Harriet Perry called the meeting to order at 8:45 a.m. The following members and others were present:

**Task Force and Subcommittee Members**

Harriet Perry, *Chairman*, USM/IMS/GCRL, Ocean Springs, MS  
Traci Floyd, MDMR, Biloxi, MS  
Vince Guillory, LDWF, Bourg, LA  
Leslie Hartman, ADCNR/MRD, Dauphin Island, AL  
Butch Pellegrin, NMFS, Pascagoula, MS  
Phil Steele, FWC/FMRI, St. Petersburg, FL  
Tom Wagner, TPWD, Rockport, TX (*Proxy for Paul Hammerschmidt*)

**Staff**

Cindy Yocom, Staff Assistant, Ocean Springs, MS  
Ron Lukens, Assistant Director, Ocean Springs, MS  
Jeff Rester, Habitat/SEAMAP Coordinator, Ocean Springs, MS  
Steve VanderKooy, IJF Program Coordinator, Ocean Springs, MS

**Others**

Virginia Vail, FWC/Marine Fisheries, Tallahassee, FL

**Adoption of Agenda**

Chair Perry requested the agenda be amended to include a presentation by Ron Lukens on nonindigenous aquatic nuisance species. The revised agenda was approved by consensus.

**Adoption of Minutes**

**T. Wagner moved to adopt the minutes of the meetings held January 19-22, 1999 in Grand Chenier, Louisiana, and March 16, 1999 in New Orleans, Louisiana. V. Guillory seconded, and the minutes were approved as written.**

**Nonindigenous Aquatic Nuisance Species**

Ron Lukens explained that a federal task force was established (Aquatic Nuisance Species Task Force) after passage of the Aquatic Nuisance Control and Prevention Act. The purpose of this Act and Task Force is to identify invasive species and determine whether or not they are nuisance species and to encourage monitoring of any species over time to determine if a species has the potential to become a nuisance. The Act also encourages states to develop intervention plans. These species run the gamut from vertebrates to invertebrates, plants, and insects. As part of the Aquatic Nuisance Task Force, the law allows regional panels consisting of experts on the front line to be established. The Gulf of Mexico Program received approval to have their Management Committee and the Nonindigenous Species Task Force to function as the regional panel for the Gulf of Mexico. Next month the Commission will be invited to sit on the panel

as an *ex officio* member. The Act specifies individual members and up to ten *ex officio* members. In preparation for that meeting, R. Lukens asked for the Subcommittee's input regarding several crab species which may need monitoring. R. Lukens distributed photos of *Callinectes bocourti* and *Cardisoma guanhumi*. He speculated that fishermen may be pulling up *bocourti* and assume it is a color aberration of *Callinectes sapidus*. Crab houses probably just run them through without paying any attention to the color difference. Does the Subcommittee feel an outreach project is warranted to monitor the presence of these animals?

H. Perry reported that *bocourti* has been seen and documented in Mississippi. The species does get as large as *sapidus*. It can be either chocolate brown like a Hershey bar or a green-brown. The species has six interorbital teeth that are very obvious. It is not a color variance that would be seen in *sapidus*. All of the *bocourti* reported in Mississippi has been brought in by commercial crab fishermen from their catches.

The second species, *Cardisoma guanhumi*, is actually an indigenous crab to southern Texas and Florida. If it is an invasive species, it has been for so long no one remembers. It can be a very noxious animal; it digs, burrows, and vigorously eats vegetation. It has been reported in Biloxi and Pascagoula, Mississippi.

R. Lukens noted that funding may be available to develop a poster to inform crab houses, processors, and fishermen to report any sightings of these species. V. Guillory suggested that the initiative not be limited to just these two species. Other species that may be of interest include *bocourti*, *guanhumi*, the Chinese mitten crab, and the green crab.

H. Perry thanked Lukens for his presentation and indicated the group would discuss the issue further after the Florida state report which contains several presentations on exotic species.

### State Reports

Florida - Blue Crab Fishery - P. Steele indicated that in addition to his report on the blue crab fishery in Florida, he has three presentations on exotic species. The blue crab fishery in Florida landed 17-18 million pounds in 1998. Value was estimated at 12-14 million dollars. All indications from preliminary 1999 landings indicate that it, too, will be a good year. Pounds per trip are stable (at 225-230 pounds per trip) after a low in 1993-1995. West Coast landings have rebounded from a dip in 1997 and are up to 12-13 million pounds in 1998. The soft crab fishery is becoming larger every year. Two years ago, Sea Grant performed workshops throughout the state to promote this fishery. There are 65-70 new peeler operations in the state compared to 1996-1997. The only regulation change this year is two more options for biodegradable panels in crab traps. Trap limitations will be explored in the near future.

In summary, production in the blue crab fishery has remained relatively stable with peaks every three to five years. Since 1985, the number of commercial fishermen has increased 80%. Catch per fishermen has decreased 33% from 16,000 pounds in 1985 to 10,000 pounds in 1997. Fishing effort has increased 88% while yield per trip (pounds per trip) has decreased 36%. Effort on the Gulf coast has increased 82%; the yield is down 39%. The fishery is operating at a rapidly declining level of economic efficiency; harvest varies annually, geographically, and seasonally. Habitat loss and increased gear efficiency are two factors involved. Fishermen are constantly improving their gear and looking toward the development of artificial bait. In the mean time, fishermen have been testing hog snouts, pigs feet, cat food, and chicken as bait.

Exotic species - The Chinese mitten crab, *Eriocheir sinensis*, is about 80 mm across and gets its name from the harried projections on its chelae. Indications are interorbital teeth, four spines, and fuzzy claws. *E. sinensis* is native to coastal estuaries and rivers in Korea and China. They were introduced into Germany in the 1920s. They have now migrated throughout Europe. These animals have invaded the West Coast of the United States and were first found in shrimp nets in 1992. The probable mechanism for its distribution is

ship ballast. With its extensive port, San Francisco gets a new exotic species in its estuarine system every 16 weeks.

The Chinese mitten crab is a threat to the ecological balance of freshwater systems throughout the Gulf of Mexico and a threat to public health. *E. sinensis* is a secondary, intermediate host to Oriental lung fluke. Humans become infected by eating raw or poorly cooked crab. The raw gonads of these crabs are an Oriental aphrodisiac. Singapore and Hong Kong markets sell this product for about \$40 a kilogram, and ethnic markets in Los Angeles have been selling these crabs as live product since 1995.

The population of these animals in San Francisco has increased from approximately 500 in 1992 to an estimate today of 10 million. Females carry their eggs until hatched. Both male and female die after spawning; however, these animals are very fertile with 250,000 to one million eggs. There is a one to two month larval cycle; sexual maturity occurs at one to two years. Juveniles eat mostly vegetation, but as sexual maturity increases, these animals become very carnivorous. Their dietary requirements would be the equivalent of the red swamp crayfish in the Gulf of Mexico region. These animals damage crops such as rice. They eat emerging fry from nest-building fish such as large mouth bass, blue gills, and other freshwater fish. They consume huge amounts of clams and oysters. Burrowing activities of these animals are somewhat unbelievable. At minimum, the *E. sinensis* burrows 50 cm; there may be as many as 30 burrows per square meter. These animals have damaged bridge supports all along the Thames River in London. They congregate in large numbers and have rendered shrimp trawls useless in California and plug freshwater intake screens for power plants.

*Cardisoma guanhumi* is also known as the blue land crab, American land crab, and the giant land crab. This species ranges in south Florida from Vero Beach, along the tip of Florida through the Florida Keys, and then along the Gulf coast up to Tampa. Densities in Dade County have reached more than 7,500 per acre. The species is rarely found further inland than eight kilometers. Adults are bluish with one cheliped larger than the other. Juveniles are dark brown. Females change colors after spawning. The animals are large, 10-11 centimeters and weigh up to 500 grams. Burrows are also large, usually 18-30 centimeters wide and up to 1.5 meters deep. Burrows tend to be in shade around shrubs. *Cardisoma* is very efficient and can extract water from the sand within their burrows. Spawning is from June until December with peaks in September and October. Females migrate back to the ocean (usually on a full or new moon) to spawn and can spawn five or six times a year. They release 20,000 to one million eggs which hatch in about 16 days. The larval cycle lasts 30-40 days. Larval transport is by tide. A nonspawning migration occurs for both males and females. There was a large fishery for *Cardisoma* in Puerto Rico at one time and accounted for 7% of their total fishery in the 1950s. Venezuela also had a fishery. In South Florida, this species is responsible for mangrove habitat loss. No state or federal regulations exist on their harvest in the state of Florida. People consider them a nuisance because their burrowing habits destroy crops and lawns. There has, however, been a recent decline in population in Florida.

*Limulus polyphemus*, the horseshoe crab, has become a concern in the South Atlantic. The ASMFC has developed a management plan for this species which has a high value in several industries. One is the \$500,000,000 biomedical enterprise. Blood from the horseshoe crab is used to make an extract, LAL, which is the worldwide standard for detecting bacterial contamination. Their eggs are used as bait in the conch and whelk fisheries, and the animal is also critical in the migration of shore birds. The Audubon Society led the way in development of the FMP because of a decline in the population of shore birds in Delaware and New Jersey in the last few years. Shore birds in Delaware and New Jersey are a billion-dollar industry.

There are two or three other species which are mostly in Asia. In Florida, the horseshoe spawns from March through August. Mating occurs in the intertidal. Eggs are laid on nonporous, intertidal substrate and hatch in 14-30 days. Larvae and juveniles spend their first two years within intertidal flats and then move offshore. It is a very long-lived species with sexual maturity occurring at 9-11 years.



## DEPARTMENT OF CONSERVATION AND NATURAL RESOURCES

**W**hereas, the Gulf States Marine Fisheries Commission was established "... to promote the better utilization of the fisheries, marine, shell and anadromous, of the seaboard of the Gulf of Mexico, by the development of a joint program for the promotion and protection of such fisheries and the prevention of the physical waste of the fisheries from any cause"; and

Whereas, the living natural resources of the Gulf of Mexico are important to the citizenry of Alabama and the other states in the Gulf of Mexico region; and

Whereas, the Gulf States Marine Fisheries Commission was established through legislation enacted by each member state and was authorized by the United States Congress in Public Law 81-66 in 1949; and

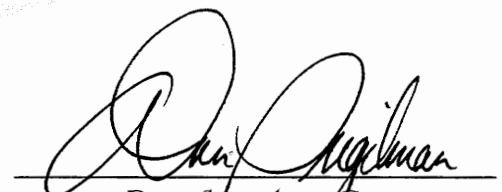
Whereas, for the past half century, the Gulf States Marine Fisheries Commission has been providing exemplary service to the State of Alabama by facilitating interagency, interdisciplinary and interjurisdictional cooperation for management of the living marine aquatic resources; and

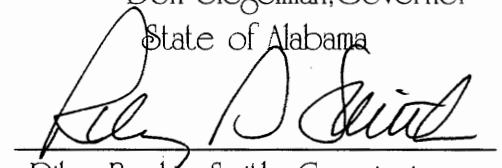
Whereas, The Gulf States Marine Fisheries Commission will celebrate its 50th anniversary on October 20, 1999; now therefore,

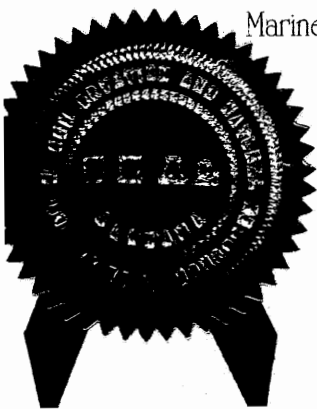
Be it resolved that State of Alabama commends the Gulf States Marine Fisheries Commission on its 50th Anniversary for its tradition of excellence and leadership toward a unified approach toward marine fishery resource management in the Gulf of Mexico region.

Resolved, this, the 20<sup>th</sup> day of May, nineteen hundred and ninety-nine in Montgomery, Alabama.

  
R. Vernon Minton, Director  
Marine Resources Division

  
Don Siegelman, Governor  
State of Alabama

  
Riley Boykin Smith, Commissioner  
Department of Conservation  
and Natural Resources



# State Of Florida

## RESOLUTION

WHEREAS, the Gulf States Marine Fisheries Commission will celebrate its FIFTIETH ANNIVERSARY in October 1999; and

WHEREAS, the Gulf States Marine Fisheries Commission was created to promote the better utilization of the fisheries of the seaboard of the Gulf of Mexico, to protect such fisheries, and to prevent physical waste of the fisheries from any source; and

WHEREAS, the Gulf States Marine Fisheries Commission is composed of representatives from five Gulf States (Texas, Louisiana, Mississippi, Alabama, and Florida); and

WHEREAS, the compact, authorized under Public Law 81-66, was signed by the representatives of the Governors of the five Gulf States on July 16, 1949, in Mobile, Alabama; and

WHEREAS, the Gulf States Marine Fisheries Commission's principal objective is the conservation, development, and full utilization of the fishery resources of the Gulf of Mexico, to provide food, employment, income, and recreation to the people of these United States; and

WHEREAS, the Gulf States Marine Fisheries Commission has provided strong leadership in the management of interjurisdictional fisheries, as well as coastal habitats; and

WHEREAS, the Gulf States Marine Fisheries Commission has faithfully endeavored to preserve fisheries resources through the strong cooperation of the member states.

NOW, THEREFORE, BE IT RESOLVED that the Governor and Cabinet of the State of Florida do hereby offer this tribute and congratulations to the Gulf States Marine Fisheries Commission on the occasion of its FIFTIETH ANNIVERSARY.

BE IT FURTHER RESOLVED that the Governor and Cabinet commend the Gulf States Marine Fisheries Commission for its long and dedicated service of managing those resources to the benefit of the citizenry of the Gulf of Mexico region.

IN TESTIMONY WHEREOF, the Governor and Cabinet of the State of Florida have hereunto subscribed their names and have caused the Official Seal of the State of Florida to be hereunto annexed in the City of Tallahassee on this 18<sup>th</sup> day of June, 1999.



*Jeb Bush*   
\_\_\_\_\_  
JEB BUSH  
GOVERNOR

*Katherine Harris*   
\_\_\_\_\_  
KATHERINE HARRIS  
SECRETARY OF STATE

*Bob Butterworth*   
\_\_\_\_\_  
BOB BUTTERWORTH  
ATTORNEY GENERAL

*Robert F. Milligan*   
\_\_\_\_\_  
ROBERT F. MILLIGAN  
COMPTROLLER

*Bill Nelson*   
\_\_\_\_\_  
BILL NELSON  
TREASURER

*Bob Crawford*   
\_\_\_\_\_  
BOB CRAWFORD  
COMMISSIONER OF AGRICULTURE

*Tom Gallagher*   
\_\_\_\_\_  
TOM GALLAGHER

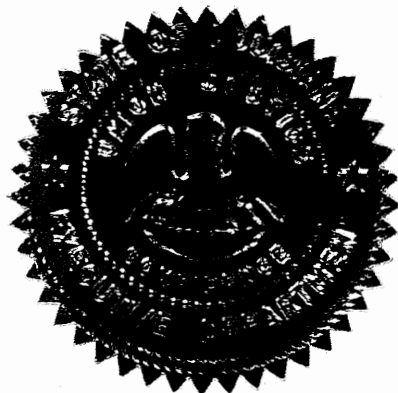
# State of Louisiana



M. J. "Mike" Foster, Jr.  
Governor

## Proclamation

- WHEREAS,** the fisheries resources of Louisiana have been an important component of the economic, social and cultural fabric of the state throughout its history; and
- WHEREAS,** Louisiana is recognized as a national leader in both the production of marine commercial fisheries products and providing quality marine recreational fishing opportunities; and
- WHEREAS,** the need to protect, conserve and manage these valuable resources extends beyond individual state lines; and
- WHEREAS,** in recognition of this, 50 years ago the Gulf States Marine Fisheries Compact was formed to provide a forum for coordinating cooperative studies and management of the Gulf's marine fisheries resources; and
- WHEREAS,** during its 50 year history, the Gulf States Marine Fisheries Commission has substantially enhanced the management of the Gulf's marine fisheries resources, including providing an effective voice for its 5 member states and Louisiana, in testimony before the United States Congress and the Executive branch of Government.
- NOW, THEREFORE,** I, M.J. "Mike" Foster, Jr., Governor of the state of Louisiana, do hereby commend the Gulf States Marine Fisheries Commission on its 50th Anniversary and urge all Louisiana residents to join me in thanking the Commission and its compact members for their efforts to protect, conserve and manage the interstate marine fisheries resources of the Gulf region.



Attest By  
The Governor

*Joseph S. Keithen*  
Secretary of State

*In Witness Whereof, I have hereunto set my hand officially and caused to be affixed the Great Seal of the State of Louisiana, at the Capitol, in the City of Baton Rouge, on this the 11th day of August*

A.D., 1999

*M. J. Foster, Jr.*  
Governor of Louisiana



State of Louisiana  
**Legislative Resolution**



Regular Session, 1999

HOUSE CONCURRENT RESOLUTION NO. 41

BY REPRESENTATIVES JOHN SMITH, DEWITT, DOWNER, MCMAINS, DIEZ,  
AND CRANE AND SENATORS DARDENNE, EWING, HAINKEL, BARHAM,  
AND SCHEDLER

A CONCURRENT RESOLUTION

To commend and congratulate the Gulf States Marine Fisheries Commission on its 50th Anniversary for leadership in coordinating the efforts of the five gulf states in developing marine fisheries management and research activities.

WHEREAS, Act No. 329 of the 1948 Louisiana Legislature provided for a Gulf Marine Fisheries Compact between the gulf states of Louisiana, Mississippi, Texas, Alabama, and Florida; and

WHEREAS, the five gulf states entered into a Compact as provided by Act 329 No. of 1948, which was approved by the United States Congress; and

WHEREAS, the purpose of this compact was to foster interstate cooperation and scientific research to promote the better utilization of the fisheries of the seaboard of the Gulf of Mexico; and

WHEREAS, each gulf state did appoint three representatives to a Gulf States Marine Fisheries Commission which was given the powers and duties to effect the Compact; and

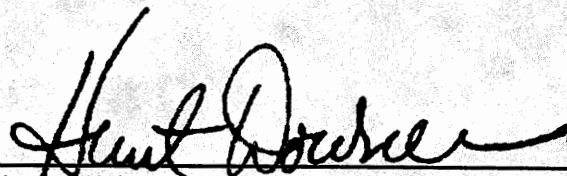
WHEREAS, for fifty years the commission has provided a forum for the five gulf states and the federal government to cooperate in the management of the interstate marine fisheries resources; and

WHEREAS, under the leadership of the Gulf States Marine Fisheries Commission, many important initiatives, including the Southeast Area Monitoring and Assessment Program (SEAMP), the Recreational Fisheries Information Network (RECFIN), and the Commercial Fisheries Information Network (COMFIN), have substantially increased the effectiveness of the management of the Gulf's marine fisheries resources.

THEREFORE, BE IT RESOLVED that the Legislature of Louisiana does commend and congratulate the Gulf States Marine Fisheries Commission for fifty years of important efforts to provide for better management of the marine fisheries resources of the Gulf of Mexico seaboard.

BE IT FURTHER RESOLVED that a copy of this Resolution be forwarded to the Gulf States Marine Fisheries Commission.



  
SPEAKER OF THE HOUSE OF REPRESENTATIVES

  
PRESIDENT OF THE SENATE

# STATE OF MISSISSIPPI

Office of the Governor



## A PROCLAMATION BY GOVERNOR KIRK FORDICE

*Whereas, commercial fishing and recreational fishing in the marine and estuarine waters of the State of Mississippi have been important to the citizens of Mississippi both economically and socially; and*

*Whereas, Mississippi is recognized nationally for its estuarine and marine resources, and as both a seafood capital and a center for recreational fishing excellence; and*

*Whereas, Mississippi has a long history of preserving estuarine and marine resources through responsible management and stewardship; and*

*Whereas, Mississippi has been a member of the Gulf States Marine Fisheries Commission since its establishment in 1949; and*

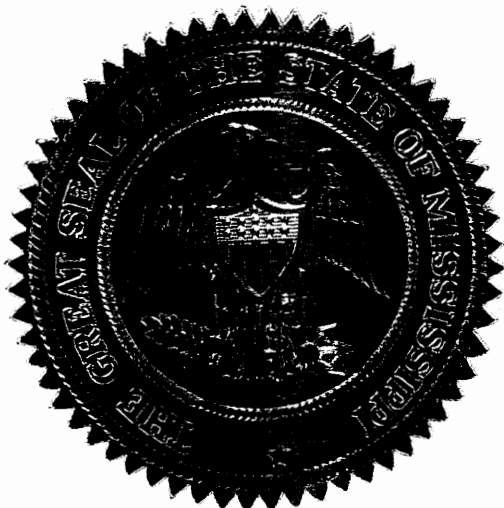
*Whereas, the Gulf States Marine Fisheries Commission, now located in Ocean Springs, Mississippi, has been serving regional estuarine and marine fisheries management and stewardship needs for fifty years; and*

*Whereas, the Gulf States Marine Fisheries Commission will hold its 50<sup>th</sup> Anniversary meeting in Biloxi, Mississippi, October 18-24, 1999:*

*Now, therefore, I, Kirk Fordice, Governor of the State of Mississippi, hereby proclaim October 18-24, 1999,*

### **GULF STATES MARINE FISHERIES COMMISSION WEEK**

*in the State of Mississippi and commend the commission for fifty years of dedication to excellence in estuarine and marine fisheries management and stewardship.*



*IN WITNESS WHEREOF, I have hereunto set my hand and caused the Great Seal of the State of Mississippi to be affixed.*

*DONE in the City of Jackson, April 20, 1999, in the two hundred and twenty-third year of the United States of America.*

A handwritten signature in black ink, reading "Kirk Fordice".

KIRK FORDICE  
GOVERNOR

# STATE OF MISSISSIPPI



## SENATE CONCURRENT RESOLUTION NO. 613

A CONCURRENT RESOLUTION COMMENDING THE GULF STATES MARINE FISHERIES COMMISSION ON ITS FIFTIETH ANNIVERSARY AND ENCOURAGING THE COMMISSION TO CONTINUE ITS TRADITION OF EXCELLENCE.

WHEREAS, the living natural resources of the Gulf of Mexico are important to the citizenry of all states in the Gulf region including Mississippi and the nation as a whole; and

WHEREAS, the physical location of the Office of the Gulf States Marine Fisheries Commission and all of its employees are in Ocean Springs, Mississippi; and

WHEREAS, most anadromous, estuarine and marine living resources are nomadic or migratory during some parts of their life histories; and

WHEREAS, the publication entitled "To Stem the Tide" recommends that "fish stocks should be managed as an entity rather than differently in each jurisdiction in which they occur or through which they may pass"; and

WHEREAS, the Gulf States Marine Fisheries Commission was established "...to promote the better utilization of the fisheries, marine, shell and anadromous, of the seaboard of the Gulf of Mexico, by the development of a joint program for the promotion and protection of such fisheries and the prevention of the physical waste of the fisheries from any cause"; and

WHEREAS, the Gulf States Marine Fisheries Commission was established through legislation from each member state and authorized by the United States Congress in Public Law 81-66 in 1949; and

WHEREAS, the Gulf States Marine Fisheries Commission has been providing a valuable service to its member states and to the nation as a whole, by facilitating interagency, interdisciplinary and interjurisdictional communication; by developing and managing interjurisdictional fisheries management program; and by seeking support for important marine fisheries initiatives, both at the state and federal levels for 50 years; and

WHEREAS, the strength and effectiveness of the Gulf States Marine Fisheries Commission has grown and improved over its 50 years of existence; and

WHEREAS, the future is positive for the Gulf States Marine Fisheries Commission to continue its tradition of excellence into the future:

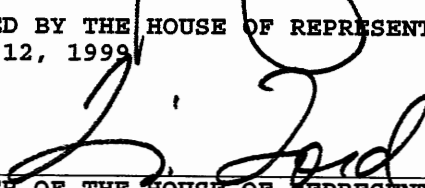
NOW, THEREFORE, BE IT RESOLVED BY THE SENATE OF THE STATE OF MISSISSIPPI, THE HOUSE OF REPRESENTATIVES CONCURRING THEREIN, That we commend the Gulf States Marine Fisheries Commission on the occasion of their 50th Anniversary Meeting held in Biloxi, Mississippi during October 18-22, 1999, and on its mission and accomplishments over the last 50 years; and encourage the Gulf States Marine Fisheries Commission to continue its tradition of excellence in facilitating communication and managing interjurisdictional fisheries programs into the future.

BE IT FURTHER RESOLVED, That copies of this resolution be presented to the Gulf States Marine Fisheries Commission and made available to the Capitol Press Corps.

ADOPTED BY THE SENATE  
March 10, 1999

  
\_\_\_\_\_  
PRESIDENT OF THE SENATE

ADOPTED BY THE HOUSE OF REPRESENTATIVES  
March 12, 1999

  
\_\_\_\_\_  
SPEAKER OF THE HOUSE OF REPRESENTATIVES

  
\_\_\_\_\_  
SENATOR BILLY HEWES, DISTRICT 49



# The Senate of The State of Texas

## SENATE RESOLUTION NO. 668

**WHEREAS**, The Gulf States Marine Fisheries Commission will celebrate its 50th anniversary on October 20, 1999; and

**WHEREAS**, Since its founding, the commission has provided effective leadership in interjurisdictional fishery resource management among the Gulf states, federal agencies, and the commercial and recreational fishing industries; and

**WHEREAS**, The purpose of the Gulf States Marine Fisheries Commission is to promote better utilization of the marine fisheries of the Gulf of Mexico by the development of a cooperative program for the sound management of these resources; and

**WHEREAS**, The Gulf States Marine Fisheries Commission has successfully established fisheries management plans for important species such as black drum, blue crabs, oysters, and menhaden and was instrumental in establishing and revising the Artificial Reef Management Plan; and

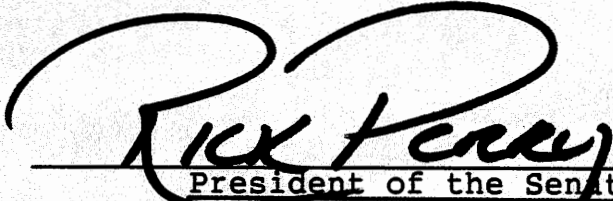
**WHEREAS**, In its capacity as a member state, Texas has greatly benefited from the support of the Gulf States Marine Fisheries Commission, and it is a privilege to recognize the commission at this time; now, therefore, be it

**RESOLVED**, That the Senate of the State of Texas, 76th Legislature, hereby commemorate the 50th anniversary of the Gulf States Marine Fisheries Commission and extend to all those associated with the commission best wishes for continued success in the management of marine resources for future generations to enjoy; and, be it further


**RESOLVED**, That an official copy of this Resolution be prepared for the Gulf States Marine Fisheries Commission as an expression of high regard by the Texas Senate.

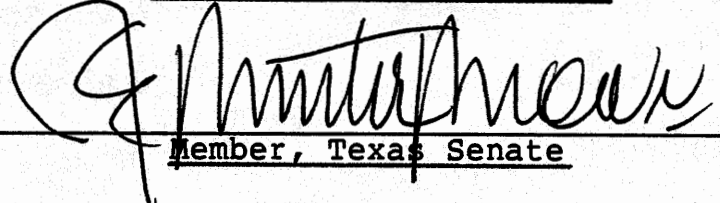


Brown

  
\_\_\_\_\_  
President of the Senate

I hereby certify that the above Resolution was adopted by the Senate on April 19, 1999. \_\_\_\_\_

  
\_\_\_\_\_  
Secretary of the Senate

  
\_\_\_\_\_  
Member, Texas Senate

Harvest began on this species in the late 1880-1890s. They were ground and used as fertilizer in the Chesapeake Bay region. The establishment of peach orchards in that portion of the country is directly attributed to horseshoe crab fertilizer. Harvest for this purpose continued until the 1960s at which time chemical fertilizers began to replace natural fertilizers.

Florida has historically never been a big contributor to the fishery. Most of the Atlantic states from Maine down to Georgia have implemented restrictive harvesting techniques. In South Carolina, harvest is exclusively restricted to biomedical research. On the other hand, Virginia is open to all harvest. Maryland and New Jersey have daily effort limitations, some for biomedical use, some not. People have begun looking toward the Gulf of Mexico as another source for this species. Last year, about 100,000 horseshoe crabs were harvested in a two-month period around the St. Joe area. Fishermen are paid about 75¢ a piece for the animals. The Florida Marine Fisheries Commission became concerned, and a series of management workshops was conducted across the state to determine what viable management options could be recommended for this upcoming fishery. Developed options included: allowable gear, allowable harvesting areas, permanently closed beaches and intertidal areas, seasons, quotas, bycatch allowances in shrimp trawls, and special consideration for scientific, educational, and pharmaceutical use. By next year, a management plan will be in place for this species in the state of Florida. The remainder of the Gulf will probably soon follow suite.

Discussion continued regarding an outreach initiative on exotic species. Some suggestions included displaying posters at bait stands, distributing pamphlets during recreational fishing surveys at the docks, and using license lists to mail posters to individual fishermen. Funding should be sought for the initiative to include work sessions to develop the poster and funds for printing and postage.

**H. Perry asked if all were in favor of presenting the recommendation to the TCC to develop an outreach initiative to inform members of the fishery of the presence of four exotic species: *Callinectes bocourti*, *Cardisoma quanhumi*, the Chinese mitten crab (*Eriocheir sinensis*), and the green crab. The motion passed with all members agreed and none opposed.**

Texas - T. Wagner reported that 1999 landings are not available; 1998 landings were seven million pounds, the highest in five years and a 21% increase more than 1997 landings. Value for 1998 landings was \$4.5 million, the highest ex-vessel value on record which exceeded the peak year of 1987 when 11 million pounds were landed. The mean annual price per pound of .65/pound is comparable to 1996-1997 after reaching a peak of .70/pound in 1995. Fishery-independent monitoring indices indicate that recruitment and mean size values from bag seine sampling are both up from 1995-1998. Bay trawl catch per hour is up; mean size continues to decline. Limited entry is going smoothly. The number of 1999 commercial crab licenses sold was unavailable as of Friday; however, the preliminary count is 530. A license buyback should begin early next year. Following a four-year moratorium, license transfer will begin in 2001. There were isolated reports of nuisance species in Texas waters. *Cardisoma* has been reported the last two years from Freeport (south of Galveston) to Rockport (mid-coast). One gentleman was angry because his dog keeps him up all night barking at them and wanted to know what the Department was going to do about the species.

Alabama - L. Hartman reported that landings are up, but value is down. Alabama has instituted a new regulation to mark crab trap buoys which is similar to the system in Mississippi. Crab license numbers remain about the same at 190 fishermen. A limited entry scare in 1986 had this number up to 230, but that has since dropped back to normal. There are no plans for escape rings or biodegradable panels in the state, but the industry has approached the Department. Crab fishermen have found that escape rings reduce their effort.

Mississippi - T. Floyd reported that the Mississippi Crab Task Force has also begun looking at escape rings. This initiative is also being driven from the fishermen up to the Department. The state is pursuing a

recreational crab fishing license and a trip ticket system. H. Perry indicated that megalopae settlement data continues to be collected. Another research project is looking at shelter limitations in state waters for stone crabs. Toad fish seem to be occupying these burrows and are predators of stone crabs. Artificial reefs are being developed from limestone and oyster shell.

Louisiana - V. Guillory reported three bills were passed. Legal stone crab length is 2½" propodus length. There is now a recreational bag limit of 12 dozen per day per person. Serviceable and unserviceable traps have been defined. Shrimp fishermen who catch a serviceable trap must now put a "common" float on the line. The National Wetlands Center is asking for a blue crab collection permit to use the crabs as whooping crane food. They are conducting a study to introduce these cranes into other habitats. V. Guillory distributed a *Times Picayune* article on domestic and imported crab products. According to NMFS statistics, the domestic share of a crabmeat has dropped from 56% to 26% in the last five years. The import total has reached 26 million pounds, an increase from 14 million pounds, an 83% increase.

### Update on Mortality Symposium

V. Guillory reported that eight papers have been received from the symposium. Four or five more are expected. The printing costs have been approved and committed from the GSMFC IJF Program and will have to be budgeted for 2000 rather than 1999 at this point. If not already received, the keynote speakers should be encouraged to submit as soon as possible. A suggestion was made to set a deadline for submission. All agreed to March 1, 2000 as the deadline for papers to be included in the proceedings.

### Review of the Blue Crab Stock Assessment/Status of FMP

B. Pellegrin reported that the work session on the FMP went well. All MSY estimates were removed, and a section was developed to explain that at least an attempt was made by the group and that available data is lacking. The data set is being updated, and all state data through 1998 have either been received or is on the way. After revision of the stock assessment, it will be sent to the SAT for their continued review. Sections 14-17 will have to be rewritten, and the stock assessment appendix will be modified as necessary. Section 9 will be rewritten to reflect the new stock assessment. A work session is tentatively scheduled for November and will include Butch, Vince, Harriet, and (at least) one Commission staff member. The task force will receive a revised copy as soon as available. A presentation will be made to the TCC this week to apprise them of current developments and progress.

### Discussion of Standardized Sampling Protocols

L. Hartman opened discussion concerning Gulf fishery-independent and dependent data bases and critical elements to the blue crab fishery. The Subcommittee enthusiastically agreed that biological parameters are necessary. **The Crab Subcommittee recommends that the fishery-independent data base be standardized to include critical biological parameters including:**

- Size (carapace width to the nearest mm)**
- Sex (above 10 mm)**
- Occurrence of the rhizocephalan parasite**
- Sexual maturity in females**
- Presence of eggs**
- Molt condition (hard/soft)**

**Further, the Subcommittee recommended that the fishery-dependent data base be standardized to include size and sex.**

The Subcommittee moved to the next room to voice their concerns to the Data Management Subcommittee on data elements of the trip ticket program. H. Perry explained that the information for blue crab is lacking. There are three critical elements which need to be collected - number of traps, length of soak time, and catch. D. Donaldson explained that these are data elements that will be obtained through the fisheries module. The trip ticket was designed not to overburden fishermen. J. Shepard explained that the information will be obtained either in a census manner or through surveys. Soak time is already on the trip ticket; it is called fishing time. L. Simpson noted to the Data Management Subcommittee that this information is highly desirable. The blue crab fishery has the second or third highest value of any fishery in the Gulf. The Crab Subcommittee indicated that this information be obtained in a census manner and explained their current problems in performing a stock assessment for the blue crab fishery. Available data is lacking, and a stock assessment cannot be done responsibly with the information. In ten years when they are charged to revise the management plan again and these elements are not available in the data, no progress will have been made to obtain the data necessary to adequately assess this stock.

### **Blue Crab Symposium**

H. Perry encouraged all members of the Subcommittee to present papers at the symposium being held at the Benthic Ecology Meeting in North Carolina in March 2000. Several members of the Subcommittee have tentatively planned to attend and asked if the Commission might be able to supply transportation (i.e., GSMFC2 van) for the trip. H. Perry agreed to make a request directly to the Executive Director as the meeting approaches.

### **Election of Chair**

**V. Guillory moved to elect H. Perry as continuing Chair of the Crab Subcommittee. P. Steele seconded the motion which passed by unanimous acclamation.**

### **Other Business**

T. Wagner indicated that he has been reappointed to the Subcommittee (replacing Paul Hammerschmidt), and an official letter will be forthcoming to the Commission office.

Dr. Martha Palacios Fest was invited to attend the meeting but was unable to attend. She has been charged with developing a blue crab stock assessment for Mexico and has requested the assistance of the Subcommittee.

Next meeting agenda items should include: the Limited Entry Symposium, an update on the Chaceon Profile, and a presentation on the horseshoe crab fishery (ASMFC member perhaps).

**There being no further business, the meeting adjourned at 12:00 p.m.**



**TCC DATA MANAGEMENT SUBCOMMITTEE  
 MINUTES  
 Tuesday, October 19, 1999  
 Biloxi, Mississippi**

Vice-Chairman Joe Shepard called the meeting to order at 8:35 a.m. The following members and others were present:

**Members**

Kevin Anson, AMRD, Gulf Shores, AL  
 Page Campbell, TPWD, Rockport, TX  
 Joe O'Hop, FMRI, St. Petersburg, FL  
 Guy Davenport, NMFS, Miami, FL  
 Joe Shepard, LDWF, Baton Rouge, LA  
 Tom Van Devender, MDMR, Biloxi, MS

**Staff**

David Donaldson, Data Program Manager, Ocean Springs, MS  
 Madeleine Travis, Staff Assistant, Ocean Springs, MS  
 Larry Simpson, Executive Director, Ocean Springs, MS  
 Gregg Bray, Survey Coordinator, Ocean Springs, MS  
 Tom Sminkey, Programmer/Analyst, Ocean Springs, MS

**Others**

Kerwin Cuevas, MDMR, Biloxi, MS  
 Tony Lowery, NMFS/NSIL, Pascagoula, MS  
 Judd Pollard, Pescador Surveys, Slidell, LA  
 Christine Johnson, MDMR, Biloxi, MS  
 Kim Dawson, NMFS/NSIL, Pascagoula, MS  
 Nancy Thompson, NMFS, Miami, FL  
 Rene Labadens, NMFS, Pascagoula, MS  
 Bob Zales, PCPB, Panama City, FL  
 Judy Jamison, Gulf and South Atlantic Fisheries Development Foundation, Tampa, FL

**Adoption of Agenda**

The agenda was approved with the addition of GSMFC under "State/Federal Reports" and a request from the Crab Subcommittee under "Other Business".

**Approval of Minutes**

The minutes for the meeting held on March 16, 1999 in New Orleans, Louisiana were approved as amended.

**State/Federal Reports**

**Florida** - J. O'Hop reported that the majority of the Florida Department of Environmental Protection as well as the Marine Patrol has been transferred to a new agency - Florida Fish and Wildlife Conservation Commission. Florida is continuing its fishery-dependent monitoring programs. The trip ticket program is

functioning normally. They are in the process of continuing to test the conversion into Oracle. Work has begun on converting the licensing data base in Oracle as well. The Department expects to be working on the stone crab trap limitation plan next year. The opening of stone crab season was delayed due to Hurricane Irene. There are approximately 1 million traps in this fishery. In addition to the regular trip interview program which is operating normally, Florida is involved in conducting observer trips on gill net boats targeting pompano. Since the net ban in 1995, the landings of pompano has greatly increased. There is some speculation that not all the landings of pompano are coming from federal waters and thus the reason for being on the gill net boats to monitor the catches and where the catches are being harvested. Also, Florida is doing some observer trips on tarp nets/purse seine on the bait fish on the east coast of Florida. Florida is continuing to conduct the Marine Recreational Fisheries Statistics Survey (MRFSS) on the east and west coasts of Florida. Due to the hurricanes and red tides, the data collection is being hampered during the summer.

Alabama - K. Anson reported that Alabama is currently involved in the development of a commercial trip ticket program. They have identified a scanning software program that will process the data. In the near future, they will be meeting with processors and fishermen to get feedback about the program. They are still targeting January 1, 2000 as the implementation date of the program. In July, changes were made regarding blue crabs. There is now a provision that commercial crab fishermen need to register their crab floats so if there are problems, the floats can be matched with a fisherman. Alabama is continuing to collect recreational fisheries data via the MRFSS. They have also experienced some problems due to weather which has hampered their ability to conduct interviews. Alabama will be closing the harvest of red snapper in state water on October 1<sup>st</sup> at midnight.

Mississippi - T. Van Devender stated the Mississippi legislative session has ended. Several items of interest were passed during the session. The Mississippi enforcement division has been transferred into the Department of Marine Resources. There was a change in the method of collecting money for removal of shells from Mississippi. The new method charges 15 cents/sack from the fisherman and an additional 15 cents/sack from the processors when the processor purchases the shells from the fisherman. Mississippi is developing a process for tracking shells within the state. Mississippi is also developing a trip ticket program and is working closely with Alabama. Funds for this activity were received at the end of July. The brown shrimp season opened in June in conjunction with the opening in Alabama. The IJF program is continuing with data collection activities for its 26<sup>th</sup> year. Mississippi is using Wallop/Breaux funds. Mississippi has conducted a recreational creel survey. There is some duplication with the MRFSS and there are plans to stop conducting the creel survey since the information being collected is being gathered via the MRFSS. The money will be used to conduct a specific survey about fishing around artificial reefs. They are continuing to collect data on cobia, triple tail, spotted trout, and striped bass. Mississippi has secured a grant that will examine the displacement of brown shrimp due to the freshwater introduction from the Bonne Carré. The grant will purchase additional remote sensing platforms in Mississippi Sound as well as additional biological sampling. Lastly, the Department will fund the Mississippi Sea Grant extension service to begin examining the use of BRDs in Mississippi.

Louisiana - J. Shepard reported that Louisiana now has a point of sale system for recreational licenses. Louisiana is conducting the MRFSS, the charter boat pilot survey, as well as head boat sampling. These activities seem to be going quite well. The trip ticket program is operating well. There was some concerns within the legislature about the continuation of the program. However, the program will continue although there were some restrictions about who needed to report. Louisiana is currently about 6 months behind on verifying and editing the trip ticket data. Most of this is older data from the beginning. They are getting a new scanning and OCR program. The new program allows the data entry personnel to see the actual ticket which helps in determining illegible characters. The new program also allows for more flexibility in changing the trip ticket forms. Louisiana is continuing to collect commercial data through the TIP. Louisiana received funding from the GulfFIN line item to develop a computerized data entry program for

dealers. This was a request from the legislature to implement this option by 2001. They are planning to conduct a survey which identifies the dealers with computers and then meet with these dealers to assist in the development of the program and evaluate the prototype. Also, Louisiana is working with ICF Consulting to begin the development of the ComFIN data management system. They will develop a prototype which transfers Louisiana trip ticket data into the ComFIN system.

Texas - P. Campbell reported that Texas is working on a shrimp initiative. This initiative will review the biology of shrimp as well as review regulations on shrimp. From these reviews, recommendations regarding changes in shrimp laws will be developed. The Texas data is currently being migrated to a client-user database. The data are in the system and Texas is still working out the bugs of the system. There has been some red tide events off Texas, specifically in the Port Isabel/Brownsville area. Through the GulfFIN line item, Texas is currently developing a for-hire vessel frame. Once this frame is developed, Texas, GSMFC and NMFS will explore the possibility of implementing an alternative method for estimating charter boat effort in Texas. Texas is working on modifying their shark regulations to be more compatible with federal regulations. Texas is still evaluating the feasibility of implementing a trip ticket program.

NMFS - G. Davenport reported that NMFS initiated a program several years ago where federal port agents review the Florida trip ticket data and fill in any of the missing data such as vessel information, gears, area fished, etc. This information is provided back to J. O'Hop in Florida. NMFS is working on a comparison of Florida trip ticket data and the federal logbook program. Funds were received through the ACCSP. They are attempting to match up the trip ticket data and logbook data. There is the potential of possible reduction of funds for the Cooperative Statistics Program (CSP). It has been suggested that the reduction could be supplemented with GulfFIN monies. The time period when this will occur is FY2001. The NMFS budget has been reduced over the years. It is not anticipated that there will be a reduction in data collection activities. Although the funds would not be directed for CSP activities, they would still be used for data collection activities in the Gulf of Mexico region. It was pointed out that this issue will be discussed later this week by the State/Federal Fisheries Management Committee.

GSMFC - D. Donaldson stated that, through the GulfFIN line item, the GSMFC is funding a variety of data collection and management activities. The GSMFC is currently administering the MRFSS. The activities are going very well. One problem is that the Commission still does not have a fully operational data entry program. They are still waiting for revisions to the current program and hopefully will have one in the near future. The GSMFC and state personnel will be attending a wave meeting in November to review data collected in waves 3 and 4. Another activity being funded is the pilot charter boat survey. Recently, the NMFS decided that the charter boat captain telephone survey will be the official method for collecting effort data in the charter boat fishery in the Gulf of Mexico, beginning on January 2000. Related to this activity are the expansion of the charter boat telephone method to the east coast of Florida as well as development of the vessel frame in Texas. Other activities funded included the continuation of sampling of menhaden and head boats in the Gulf of Mexico. Also, the GSMFC is supporting sampling of shrimp effort and biological sampling in the Gulf of Mexico. The funding provides for the hiring of port samplers to collect this information. Another activity is the continuation of the of FIN data management system. This activity provides for the hiring of a ComFIN programmer/analyst. And the last activity is the conversion of the relevant Florida databases for use in their trip ticket program.

### **Trip Ticket Presentations**

Louisiana - J. Shepard stated that Louisiana has a scanner-based data capture system. There are approximately 500,000 tickets submitted per year. The cost to operate this system is approximately \$350,000 per year. There are five correction stations. Approximately 2,000 tickets per person per day are processed in Baton Rouge. The process is that the tickets are scanned, then the data are corrected (if there are scanning errors) and then the information is mailed to the dealers. J. Shepard stated there are several

very important things to remember when implementing a trip ticket program. It is important that the state works with the dealers, processors, and fishermen to design the tickets. It is also necessary to put only the essential information on the trip ticket. It needs to be kept as simple as possible. The state should develop a scannable (if this method is used for data entry) cover sheet to accompany the tickets. This allows for tracking of batches of tickets. States need to develop a computerized catalog of the tickets sent out to the dealers. This allows for tracking of the forms and provides for some check of who is sending them. Lastly and most importantly, it is essential that the tickets are pre-audited from the beginning so if mistakes are made on the forms, they can be quickly corrected and stopped.

Florida - J. O'Hop stated that there are many interactive parts of the trip ticket system such as the actual trip ticket data as well as licensing system. It might be useful to become familiar with the licensing system in order to see if the potential is there to add some needed elements on the licenses. The Florida trip ticket program began in 1984. There are approximately 1,200 licensed dealers and about 15,000 licensed commercial fishermen in Florida. There are approximately 350,000 trip tickets submitted each year. They are reported on a monthly basis. The annual harvest in Florida is approximately 120,000,000 pounds which translates to about \$2,000,000 per year. The structure of the program which is the editing section is in the St. Petersburg office; the license section is in the Tallahassee office as well as the mainframe and computer system. The database management system needs to be able to handle various activities. One of those items is how the system will move the information as it is entered into a repository. It is important to design a form which is very clear and easy to understand for both the dealers as well as the data entry personnel. The form needs to be able to handle a variety of different scenarios since there are many different ways dealers have set up their businesses. As was reported by Louisiana, it is very important to keep track of what batches of tickets get sent to what dealers. It is necessary to develop a system which enables the agency to track the tickets when they come back. Florida has developed a computerized data entry system that the dealers can utilize. In addition to this program, dealers have developed their own programs as long as the necessary data is provided to the agency. Computerized reporting doesn't always alleviate some of the problems with traditional data entry. Florida is developing a new system which will be easier for the dealer to use as well as provide more information about the fishing activities. This will allow for more verification of the data. Once the data are entered, there needs to be some type of verification/validation of the data. This can be accomplished via a variety of methods. Once all the checks have been conducted, it is a good idea to check one final time to make sure that there are no problems with the data. It is important to provide information (posters, maps, etc.) to dealers to make the reporting of the data as easy as possible.

### **Election of Officers**

After some discussion, Joe O'Hop was elected Chairman and Joey Shepard was re-elected Vice-Chairman.

### **Other Business**

H. Perry stated that the Blue Crab Technical Task Force (TTF) has reviewed the prototype trip ticket forms being developed for the Alabama and Mississippi trip ticket programs. It was noted that these forms lack critical data elements relevant to the blue crab fishery. It is essential that the number of traps fished, soak time, and catch be collected to allow managers to determine CPUE in the blue crab fishery. H. Perry recommended, on behalf of the TTF, that these items be included in the trip ticket programs. It was noted that although these data elements will not be collected on the trip ticket form, the information will be collected via a survey through the fishery module of ComFIN. H. Perry stated that the TTF believes this information needs to be collected for each trip. The Subcommittee stated that although a census of fishing activity might be preferred, the chances of getting all this information is not realistic. The dealers and fishermen won't be willing to provide the data. If they are required to provide it, the chances of obtaining unreliable data increases. Therefore, the ComFIN Committee decided that this type of detailed effort

information would be better collected via a survey. The group assured the TTF that the data collected via the fishery module will allow managers to determine the necessary effort measures for the blue crab fishery.

**There being no further business, the meeting was adjourned at 11:45 a.m.**

**S-FFMC MENHADEN ADVISORY COMMITTEE  
MINUTES  
Tuesday, October 19, 1999  
Biloxi, Mississippi**

Vince Guillory, Chairman, called the meeting to order at 1:11 p.m., with the following in attendance:

**Members**

Dalton Berry, Omega Protein, Inc., Hammond, LA  
 Barney White, Omega Protein, Inc., Houston, TX  
 Borden Wallace, Daybrook Fisheries, Inc., Empire, LA  
 Behzad Mahmoudi, FMRI/ Florida FWC, St. Petersburg, FL  
 Corky Perret, MDMR, Biloxi, MS  
 Joseph Smith, NMFS, Beaufort, NC  
 Jerry Mambretti, TPWD, Port Arthur, TX  
 Vernon Minton, ADCNR/MRD, Gulf Shores, AL

**Staff**

Larry Simpson, Executive Director, Ocean Springs, MS  
 Steve VanderKooy, IJF Program Coordinator, Ocean Springs, MS  
 Jeff Rester, SEAMAP/Habitat Program Coordinator, Ocean Springs, MS

**Others**

Rick Schillaci, Omega Protein, Inc., Moss Point, MS  
 Mike Wilson, Omega Protein, Inc., Hammond, LA  
 Richard Bennet, MMS/DOI, New Orleans, LA  
 Judy Jamison, Gulf and South Atlantic Fisheries Development Foundation, Inc., Tampa, FL  
 Ginny Vail, Florida FWC - Division of Marine Fisheries, Tallahassee, FL  
 Fred Miller, GSMFC Commissioner, Shreveport, LA  
 John Roussel, LDWF, Baton Rouge, LA

**Introductions and Membership Review**

V. Guillory welcomed everyone and started the introductions. The membership roster was reviewed and changes to phone numbers, addresses, or e-mails were noted.

**Adoption of Agenda**

B. Wallace commented on the current rotation of chairman and suggested the addition of Election of Chairman to the agenda. **V. Guillory made the motion which was seconded by J. Smith and V. Minton, and the agenda was accepted as amended.**

**Approval of Minutes (March 16, 1999)**

It was noted by C. Perret that the section on the data collection program should include much stronger language about the health of the menhaden stock. Perret suggested that the section be amended with a statement or reference about the status and health of the Gulf menhaden stock from Doug Vaughan's (NMFS) stock assessment presentation at the March 1998 meeting in Destin, Florida. **B. Wallace moved that the minutes be accepted as amended; the motion was seconded and unanimously approved.**

## **Status of the 1999 Gulf of Mexico Menhaden Fishing Season**

J. Smith reported to the Committee on the 1999 fishing season. Preliminary information through September 30 indicates that menhaden harvested for reduction totaled 643,000+ mt, an increase of 47% over last year and a 26% increase over the last five-year average. Whereas 1998 was plagued by smoke and haze in the western Gulf and an active tropical season, 1999 was fair with little tropical activity. Five factories and 55 vessels offloaded Gulf menhaden for reduction, three of which tied up early or mid-season and two bait boats unloaded infrequently for reduction. Moss Point and Morgan City closed in late September, and the Morgan City fleet was moved to another plant in western Louisiana. The early closures in 1999 resulted in roughly a 26 week season similar to what we saw prior to 1993. Projected final landings for 1999 should be around 685,000+ mt and appears to be the best since 1994 and second behind the 1987 landings.

Unlike last year, this season had excellent fishing weather. April started good and there were a few weeks of fishing early. Mays catches were excellent, especially around Chandeleur and Breten Sounds. Morgan City did not run full steam until June in spite of excellent catches with record plant weeks at other locations. The first bad weather was around July 4 weekend, windy weather and the holiday resulted in a few lost days of fishing. Hurricane Brett did little to deter fishing in August when it hit Padre Island, Texas. The seasonal closure of plants occurred from late September to early October. Although the catches were way up in 1999, the product values were way down, unlike the last two years.

To date, roughly 7,000 fish have been aged, and the age structure in 1999 has been roughly 50:50 between age-1's and age-2's with age-1's harvested at Empire, and age-2's at Moss Point, Morgan City, and Abbeville. Empire is definitely catching younger fish in recent years. The forecast in April predicted 567,000 mt for 1999, and we appear to be within the 20% confidence interval, although it was almost exceeded. In addition, the Captains Daily Fishing Reports (CDFRs) are continuing to be entered into the computer, and 1999 should be finished this winter.

Doug Vaughan's Gulf menhaden stock assessment has been accepted to the NOAA Technical Report Series, and the reviews are in. He should get that out fairly soon. Recent publications based on the CDFRs have come out from the Atlantic data. This year Smith will work on getting some of the Gulf data into publication form.

There have been considerable changes at the Beaufort Lab since the National Ocean Service (NOS) has moved in. The new name of the lab is the Center for Coastal Fisheries and Habitat Research, Beaufort Laboratory. Roughly 80% of the total staff is now NOS. Mike Prager has joined the Population Dynamics Team and should prove to be a valued asset to the menhaden group. The lab, which is celebrating its 100<sup>th</sup> anniversary, was spared this year despite being hit by Hurricane Dennis twice, Floyd, and Irene. Fortunately, the question of contaminants entering Pamlico Sound and the estuaries appears to be solved due to the sheer volume of freshwater the Carolinas have received this summer diluting any contaminants.

A brief discussion regarding the age structure and influence of tropical systems on future catches ensued. Smith also reminded the committee that he has somehow become the keeper of "kills and spills." A file is being kept of menhaden kills on the Atlantic, and he would like to get copies of menhaden kill information on the Gulf as well.

Commissioner F. Miller had not arrived so the agenda was rearranged to accommodate his arrival to hear the bycatch report.

## **Menhaden Data Collection Program**

L. Simpson reported that this year the menhaden port samplers have been included in the blanket FIN budget since it is fishery dependent biological sampling. The Beaufort Lab should continue to try to get the money

internally to help pay for things like CDFR data entry. Incorporation into the data collection program has smoothed the money situation finally and allowed for training of samplers in advance of the season.

### **Advances in Bycatch Reduction**

B. White, R. Schillaci, and M. Wilson provided a hands-on presentation on the progress in bycatch reductions efforts by the industry. The Mark IV hose cage (with the double basket), hydrostall pumps, and other changes to gear (including the Hal Osburn memorial shark grabber) have resulted in an additional reduction in large fish bycatch for the industry of nearly 50%. The size of the cage helps distance the sharks from the greatest suction pressure at the hose. These innovations do come at some cost, however. It is estimated that pumping efficiency will decrease 25% resulting in longer soak times and a loss of roughly 2,000 fish in each set due to the inability to complete empty the hardened net. Industry will continue to work on these designs in hopes of further reducing large fish bycatch.

### **Menhaden FMP Revision Progress Report**

S. VanderKooy summarized the major changes in the Gulf Menhaden FMP revision he and J. Smith have been working on. There was some discussion about additional editing to the first six sections. The additional changes will be updated, and VanderKooy anticipates the last half of the Plan to be drafted by the March 2000 meeting.

### **Election of Chairman**

Being the 50<sup>th</sup> year of the Commission, B. Wallace recounted how the rotation of Chair began on October 16, 1979. Several past chairs of the Menhaden Advisory Committee have passed on; J.Y. Christmas, Bob Chapoton, and Harry Schafer. **Although the current rotation for chairman should go to industry, it was agreed that for consistency while the FMP is in revision, V. Guillory would remain as Chair. V. Minton moved as such and B. White seconded; Guillory was elected unanimously.**

### **Other Business**

**There being no other business, the meeting adjourned at 3:50 p.m.**



**TECHNICAL COORDINATING COMMITTEE  
MINUTES  
Thursday, October 21, 1999  
Biloxi, Mississippi**

Chairman Corky Perret called the meeting to order at 8:30 a.m. The following members and others were present:

**Members**

Doug Frugé, USFWS, Ocean Springs, MS  
 Jerry Mambretti, TPWD, Port Arthur, TX  
 Terry Cody, TPWD, Rockport, TX  
 Tom McIlwain, NMFS, Pascagoula, MS  
 Corky Perret, MDMR, Biloxi, MS  
 John Roussel, LDWF, Baton Rouge, LA  
 Tom Van Devender, MDMR, Biloxi, MS  
 Alan Huff, FFWCC, St. Petersburg, FL  
 Virginia Vail, FFWCC, Tallahassee, FL  
 Steve Heath, ADCNR, Dauphin Island, AL  
 Jim Duffy, ADCNR, Dauphin Island, AL  
 Joseph Shepard, LDWF, Baton Rouge, LA

**Staff**

Jeff Rester, Habitat/SEAMAP Coordinator, Ocean Springs, MS  
 Madeleine Travis, Staff Assistant, Ocean Springs, MS  
 Larry Simpson, Executive Director, Ocean Springs, MS  
 Ron Lukens, Assistant Director, Ocean Springs, MS  
 Steve VanderKooy, IJF Coordinator, Ocean Springs, MS  
 Gregg Bray, Survey Coordinator, Ocean Springs, MS  
 Dave Donaldson, Data Program Manager, Ocean Springs, MS

**Others**

Don Christy, MS Legislature, Jackson, MS  
 Russell Nelson, FFWCC, Tallahassee, FL  
 Steve Winters, NMFS, Pascagoula, MS  
 John Tennyson, NMFS, Pascagoula, MS  
 Mike Ray, TPWD, Austin, TX  
 Dale Shively, TPWD, Austin, TX  
 Columbus Brown, USFWS, Atlanta, GA  
 William Hogarth, NMFS, St. Petersburg, FL  
 William Holland, GMP, SSC, MS  
 Marilyn, Barrett-O'Leary, Sea Grant, Baton Rouge, LA  
 Mike Brainard, MDMR, Biloxi, MS  
 Butch Pelligrin, NMFS, Pascagoula, MS  
 Ed Joyce, Tallahassee, FL  
 James Warren, GCRL, Ocean Springs, MS  
 Vernon Minton, AMRD, Gulf Shores, AL  
 Sam Hamilton, USFWS, Atlanta, GA  
 Tom Schmidt, NPS, Homestead, FL  
 Harriet Perry, GCRL, Ocean Springs, MS

Chris Dorsett, GRN, New Orleans, LA  
Ken Savastano, NMFS, SSC, MS  
Tommy Gollott, MS Legislature, Jackson, MS  
Chris Nelson, Bon Secour Fisheries, Bon Secour, AL

### **Adoption of Agenda**

The agenda was adopted with the review of inshore fishery sampling in each state being covered under the Crab Subcommittee Report.

### **Approval of Minutes**

The minutes for the meeting held on March 17, 1999 in New Orleans, Louisiana were approved as written.

### **State/Federal Reports**

Florida - R. Nelson stated that an extensive red tide has been occurring on the Panhandle of Florida. The Florida Fish and Wildlife Conservation Commission is frustrated about red snapper and the recreational season. Florida is developing a red snapper plan that would include a 16 inch minimum size limit and a recreational season from April 15 to October 31 each year. A stock assessment has been completed on spotted seatrout and Florida has not reached their management goal yet. Florida is increasing the size limit on king mackerel to 24 inches. Florida is developing a horseshoe crab management plan. Finally, stone crab trap losses due to Hurricane Irene were minimal.

Alabama - S. Heath stated that the Mobile Bay inshore artificial reef program is going well. Shrimpers and recreational fishermen were consulted to find the best place to site the reefs. Lots of people from many different areas are involved and many companies are donating materials like drainage pipes and culverts. The red tide event that is off the Panhandle of Florida has made its way into Alabama waters. It has reached Fort Morgan on the east side of Mobile Bay. Luckily, there have not been any fish kills reported. Alabama is making progress on their automated trip ticket program. They have found the software that they want to use for the program.

Mississippi - T. Van Devender reported that the Mississippi Legislature made some changes this year that will affect fisheries. The first is that DMR now has a law enforcement division and there is now a tax on oysters. This is a \$0.15 tax on both the fishermen and the processor for each sack of oysters produced. Mississippi was able to coordinate the opening of shrimp season June 9 with Alabama. Shrimp catches are down about 15%. Mississippi now has an artificial reef plan. Mississippi is now buying and placing remote sensing devices on existing Coast Guard platforms to monitor environmental conditions offshore.

Louisiana - J. Shepard stated that Louisiana is continuing participation in the MRFSS survey. They have also started a point of sale on recreational fishing licenses to determine where they are being sold. The Louisiana Legislature wants the trip ticket program computerized by January 2001. Eleven resource survey cruises found hypoxia at 44% of the stations. The hypoxic zone off Louisiana is the largest that has been recorded. There is some red tide off the coast of Louisiana. The shrimp and crab season was good and oyster prices are down. The Legislature set a minimum size limit on stone crabs. The Artificial Reef Program has added 11 structures this year and that brings the total number of structures to 85.

Texas - J. Mambretti stated that Texas is in its 25<sup>th</sup> year of independent sampling. Texas is undergoing an extensive review of its shrimp management policies. This is the second year of shrimp and crab virus monitoring. A bycatch study is taking place in Matagorda Bay. There is currently a red tide around

Brownsville. Texas is studying prop scars in seagrass beds. Five platforms have been added to the artificial reef program. A new 52-foot research vessel is being readied. A sister vessel is currently being built.

NMFS - T. McIlwain stated that the *R/V Gordon Gunter* is out working finally. Bill Hogarth is the new Regional Administrator for the southeast region. The red drum and reef fish stock assessments have been completed. NMFS Headquarters is still concerned about shrimp viruses. A virus monitoring program has been started, and SEAMAP is collecting the samples for the virus monitoring. NMFS has granted a TED exemption for 30 days for Matagorda Bay in Texas.

USFWS - D. Frugé stated that the Panama City office is involved in a month-long sampling program to estimate the Gulf sturgeon population in the Choctawhatchee River, producing an educational video on Gulf sturgeon, and sonic tracking of Gulf sturgeon in Choctawhatchee and Apalachicola Bays. The Gulf Coast Fisheries Coordination Office is continuing work to finalize a range wide status review of Alabama shad. The FY2000 budget has a \$6.2 million increase over 1999 funding. This includes \$115,000 for sea turtle work at Rancho Nuevo, Mexico.

### Aquatic Nuisance Species Task Force and State Plans

R. Lukens stated that Dr. Ed Theriot would not be here to give his presentation. He stated that the awareness of the effects of aquatic nuisance species are becoming more prevalent. A task force was formed that carries out the provisions of the Aquatic Nuisance Species Prevention and Control Act. The task force identifies possible nuisance species and how to control nuisance species. R. Lukens introduced M. Barrett-O'Leary and she gave a presentation on the essential elements that should be in state aquatic nuisance species plans. She stated that Congress passed the Aquatic Nuisance Species Prevention and Control Act in 1996. She stated that ballast water is a big concern. The national task force helps manage species that do not come through ballast water. She stated that the aquaculture industry is a potential source of nonindigenous species. The task force would like each state to prepare a nuisance species management plan. The goals of these plans should be to prevent new introductions, limit the spread of established populations, and abate harmful ecological, economic, social, and public health impacts. These plans would look at many different factors that could affect the ability of a nuisance species to spread within a state. When a management plan is in place within a state, federal funding is available to help manage nuisance species. The plan will also establish leadership and the lead agency within a state. Everyone that could possibly be affected by nuisance species must get involved in the plan formulation. M. Barrett-O'Leary stated that state agencies are already in place that monitor, research, administrate, or educate and these agencies should be fully utilized in a nuisance species management plan. In most states, the wildlife and fisheries agency is the lead agency and provides the leadership needed to fully manage nuisance species.

R. Lukens stated that the Commission should consider drafting letters to the governors of each Gulf state encouraging them to identify all state agencies that have aquatic nuisance species responsibilities and to designate a lead agency to manage aquatic nuisance species. **D. Frugé made a motion to ask staff to draft a letter to the governor of each state encouraging them to identify all state agencies that have aquatic nuisance species responsibilities and to designate a lead agency to manage aquatic nuisance species. A. Huff seconded this motion and it passed unanimously.**

### Summary of Aquaculture Programs by State

J. Rester stated that the Summary of Aquaculture Programs by State was presented to the TCC at the March meeting. It has been updated and revised since the March meeting. He stated that he would like the TCC to take action on this report at this time. V. Vail stated that she would like to have time to review the document and make sure that it is accurate before she takes final action on it. J. Roussel stated that Louisiana has developed an Aquaculture Task Force and they are currently developing an Aquaculture Plan.

C. Perret stated that the TCC should have time to review the document before the March meeting. The TCC would then take final action on the report.

### **Review of the Draft Commission Mariculture Policy**

J. Rester stated that Mariculture Policy was distributed to TCC members before the meeting. J. Roussel wanted to change the wording in one section from "are responsible" to "should be responsible". This was to maintain consistency throughout the policy. **J. Roussel made a motion to accept the Mariculture Policy with the suggested changes and forward it to the Commission Business meeting for their review. T. McIlwain seconded the motion and it passed unanimously.**

### **Discussion of the Spotted Seatrout FMP**

S. VanderKooy stated that the spotted seatrout FMP has not changed much since March. The comments that he has received so far are comments that the states will have to deal with. They are not simple editorial issues. These issues need to be discussed in either the TCC or the State/Federal Fishery Management Committee. Mississippi provided comments and Texas indicated they had no comments regarding the FMP. The TCC has reviewed the spotted seatrout FMP for six months. J. Roussel stated that he was concerned about not being able to review all comments before they are incorporated into the FMP. S. VanderKooy stated he would like to summarize all comments received and then distribute them to the TCC. The TCC could then take action on those comments. S. VanderKooy stated that ideally he would like the TCC to take action on the FMP by March.

### **Discussion of the Flounder FMP**

S. VanderKooy stated that he has not received many comments concerning this FMP. The TCC has been reviewing it since March. The comments he has received to date have been mainly editorial in nature. All corrections received to date have been incorporated into the document that the TCC has before them now. **T. Cody made a motion to continue reviewing the Flounder FMP but allow concurrent review by the State/Federal Fisheries Management Committee. S. Heath seconded this motion and it passed unanimously.** S. VanderKooy stated he would like to have all comments in by December 15. C. Perret would like S. VanderKooy to write a letter to the TCC members reminding them of their responsibility to provide comments by the 15<sup>th</sup>. S. VanderKooy stated he would like to summarize all comments after the first of the year and have the TCC conduct a mail ballot vote on this FMP. This would allow the State/Federal Fisheries Management Committee to vote on the FMP in March.

### **Presentation of the Updated Blue Crab Stock Assessment**

S. VanderKooy stated that the stock assessment team has been working on revising the blue crab stock assessment. Currently, the FMP is on hold because of changes to the stock assessment. He will send a revised copy of the blue crab FMP to all TCC members. Next, B. Pellegrin made a presentation on the concerns that the stock assessment team had with the blue crab stock assessment. Some questions raised include high recruitment levels biasing total mortality estimates, estimates of total mortality combining males and females that have sex specific growth rates, lack of fishery dependent information, and using another model to determine the stock assessment. The current FMP will remove MSY. The TCC will receive the updated blue crab FMP after the first of the year.

### **Subcommittee Reports**

**Anadromous** - D. Frugé stated that Robin Bruckner from NMFS's Community Based Conservation Program gave a presentation on a project that restored anadromous fish habitat in Washington. The Louisiana

Department of Wildlife and Fisheries reported that their radio tracking project on striped bass in the Pearl and Tchefuncte Rivers has been continuing, but tagged fish have been difficult to find. The Gulf Coast Research Lab reported they had a very poor year for raising fingerling striped bass. They also reported that the tag return rate this year has been below the level seen in recent years. Texas Parks and Wildlife Department reported that their striped bass work is still focused completely on inland stocking. The FWS is initiating a sampling program to estimate the Gulf sturgeon population in the Choctawhatchee River and will be expanding sonic telemetry of Gulf sturgeon in Choctawhatchee and Apalachicola Bays. The Panama City Fisheries Office has contracted for production of a 15-minute educational video on Gulf sturgeon. Work is continuing on a range wide status review of Alabama shad. The Striped Bass FMP revision was discussed. Work on this FMP will not begin until the Commission completes the current FMPs that are being revised. This will probably not occur until 2001. D. Frugé was again elected Chairman and Charlie Mesing Vice-chairman.

Crab - H. Perry reported that the Natural Mortality Symposium went off well. Everyone felt that it was a big success. H. Perry stated that R. Lukens talked to the Subcommittee about the Aquatic Nuisance Species Task Force. Two species of crabs are currently invading the US. They are the Chinese mitten crab and the green crab. The Subcommittee is seeking TCC endorsement for Commission participation in the Aquatic Nuisance Species Task Force and in its effort to gather information on exotic crab species. R. Lukens stated that he would like permission from the TCC to pursue funding to make posters in English and Vietnamese that describe the crabs and ask for any information on the crabs. These posters would be distributed to crab plants and fishermen who interact with crabs on a daily basis. **T. Van Devender made a motion that the TCC grant approval for R. Lukens to seek funding for a poster that would gather information on these exotic crabs. S. Heath seconded the motion and it passed unanimously.** H. Perry then stated that the Gulf states are currently not collecting the same crab fishery independent data. The Crab Subcommittee would like all states to record the carapace width, sex, molt condition, presence or absence of *Rhizocephalan*, and presence of eggs. They would like to see this information regardless of gear type used in the sampling. J. Shepard stated that the FIN program has made strides to have all states coordinate their sampling programs and try to standardize their sampling. T. Cody asked if the Crab Subcommittee wanted additional sampling that is not currently being done or just the collection of this data. H. Perry responded that they would like to see this standardized biological information collected for blue crabs. C. Perret would like H. Perry to address a letter to him and he would send it out to the TCC members. This letter would state the type of information that she would like to see collected. T. McIlwain would like to encourage the states to conduct standardized sampling.

SEAMAP - J. Rester stated that a meeting was held in August with NMFS to discuss the SEAMAP database and GSMFC taking over data management responsibilities. The SEAMAP Annual Report to NMFS was completed in August. The 1998 Atlas is being completed. The TCC Report has been completed and distributed. The Fall Plankton Cruise took place in September and the Fall Groundfish Cruise is underway. The next item was the development of a real time data questionnaire. The Council has requested NMFS in the past to not distribute Summer shrimp real time data. The Subcommittee believes that the Council and NMFS are only hearing one side of the story. Therefore, the possibility of a questionnaire has been discussed. The Subcommittee felt that before funds are dedicated to a questionnaire, the new Regional Administrator should be contacted to determine his attitude toward the distribution of real time data. A summary of juvenile red snapper catches from the Fall groundfish cruise will be distributed again this year. Richard Waller reported that the SEAMAP web page is still under development. A meeting between the SEAMAP data manager and the development team from USM will be held soon. Mark McDuff is the new SEAMAP data manager and he gave an update on the SEAMAP database. Scott Nichols also discussed the database and the status of transferring the database into Oracle. Richard Waller was again elected Chairman. J. Rester also presented an award to Ken Savastano for his many years of dedicated service to SEAMAP as the SEAMAP data manager.

Data Management - J. Shepard reported that the Subcommittee discussed the trip ticket programs in Florida and Louisiana. This was a timely issue because the other Gulf states are developing their own trip ticket programs. The Blue Crab TTF joined the Subcommittee in their meeting to discuss putting new items on the trip ticket forms. The Subcommittee feels that all trip ticket programs should be flexible and this would allow collection of new data as needs are identified. Joe O'Hop was elected Chairman.

Artificial Reef - R. Lukens reported that the Subcommittee met in June and discussed an informational brochure regarding Loran versus GPS, including the difference between GPS and DGPS, the status of the National Artificial Reef Plan revision, a presentation from the Marine Forensics Panel of the Society of Naval Architects and Marine Engineers regarding cooperation when sinking ships for artificial reefs, a project using computer assisted side scan sonar to relocate existing artificial reef sites, and a possible position statement on the use of dredge spoil as artificial reefs. The Subcommittee will next in November with the Atlantic States Marine Fisheries Commission's Artificial Reef Advisory Committee.

Habitat - D. Shively reported that two presentations on community based habitat work were made at the Habitat Subcommittee meeting. Robin Bruckner from the NMFS Office of Habitat Conservation gave a presentation on NMFS's community based restoration program. This program started in 1996 and has funded 75 projects. Awards for projects are made on a competitive basis and must be cost matched with other non-federal funds. Next, Tom Cathcart of Mississippi State University gave a presentation on a restoration project in Biloxi. In 1994, Biloxi asked MSU to consider alternatives to the storm drains along the Mississippi beaches. The group broke the pipe halfway up the beach and planted natural vegetation around the pipe. This allowed the water to filter through vegetation before going into the Sound. The project has had some setbacks but is currently going strong. Dr. Tom McIlwain gave the next presentation on aquaculture diseases and their possible spread to wild populations. Dr. McIlwain stated that a report is due in the next couple of months that evaluates the risk of exotic viruses to wild shrimp populations. The Subcommittee will review this report at the next meeting. The Subcommittee next reviewed the habitat section of the Menhaden FMP. Subcommittee members had a few minor problems with the section and will provide updates to Steve VanderKooy. Next, the Subcommittee discussed the new habitat poster. TPWD artists have generated a small draft of the poster and members were happy with the results. A full scale poster will be developed before the next meeting. J. Rester reported on the status of the project to identify irreplaceable habitat throughout the Gulf of Mexico. The project is still underway and members discussed possible contacts to help identify this type of habitat in each state. J. Rester reported that the Fishing Impacts Annotated Bibliography is going well. He stated that at a September meeting with NMFS and Council habitat contacts, NMFS Headquarters officials became interested in the project and decided to fund travel, further research, and printing costs for the bibliography. NMFS has provided \$4,000 to further the project. Currently the bibliography contains over 450 citations for papers that deal with fishing impacts to habitat. The bibliography should be completed around the first of the year. D. Shively was again elected Chairman.

### Election of Chairman

C. Perret was again elected Chairman and J. Roussel was elected Vice-chairman.

### Other Business

J. Shepard wanted to begin the process of looking into standardized fishery sampling. C. Perret recommended that the Data Management Subcommittee explore this at their next meeting.

**With no other business the meeting adjourned at 12:00.**

JKW

**LAW ENFORCEMENT COMMITTEE  
MINUTES  
Thursday, October 21, 1999  
Biloxi, Mississippi**

Chairman Jerry Waller called the meeting to order at 8:30 a.m. Members and others introduced themselves; the following were in attendance including the new member from the USCG:

**Members**

Jerry Waller, *Chairman*, ADCNR/MRD, Dauphin Island, AL  
Terry Bakker, MDMR, Biloxi, MS  
Bruce Buckson, FWC/DLE, Tallahassee, FL  
David Fiedler, USCG 8<sup>th</sup> District, New Orleans, LA  
Dennis Johnston, TPWD, Austin, TX  
Jeff Mayne, LDWF, Baton Rouge, LA  
Dave McKinney, NOAA/NMFS/OLE, St. Petersburg, FL (*Proxy for Gene Proulx*)

**Staff**

Larry B. Simpson, Executive Director, Ocean Springs, MS  
Cynthia B. Yocom, Staff Assistant, Ocean Springs, MS

**Others**

Mara Booth-Miller, USCG 7<sup>th</sup> District, Miami, FL  
David Cinalli, USCG 7<sup>th</sup> District, Miami, FL  
William Hogarth, NMFS SERO, St. Petersburg, FL  
Lucia Hourihan, GSMFC Consultant, Ocean Springs, MS  
J.T. Jenkins, ADCNR/MRD, Dauphin Island, AL  
Fred Miller, GSMFC Commissioner, Shreveport, LA  
Vernon Minton, ADCNR/MRD, Gulf Shores, AL  
Russell Nelson, FWC, Tallahassee, FL  
Karen Raine, NOAA GCEL/SE, St. Petersburg, FL  
David Rose, MDMR, Biloxi, MS

**Adoption of Agenda**

The agenda was reviewed and approved as presented.

**Adoption of Minutes**

The minutes of the meeting held Wednesday, March 17, 1999, in New Orleans, Louisiana, were thoroughly reviewed. J. Waller reported on the current progress of action items:

Fisheries Information Radio Initiative - In response to the congressional letter requesting support for the fisheries information radio station, the FCC provided a list of marine VHF channels and current use designations. All members agreed that an appropriate channel does not currently exist. The LEC agreed that a separate channel is necessary and appropriate to relay this information to the public. The LEC decided to confer with the Commercial-Recreational Fisheries Advisory Panel on this initiative, and J. Mayne volunteered to attend their session in March to discuss the initiative and seek their suggestions. **The LEC requested GSMFC staff invite a representative from the FCC to the March meeting for presentations to be the LEC and C-RFAP.** Both groups will benefit from a presentation on FCC rules and the appropriate procedure to activate an additional channel for fisheries information broadcast.

Coastal Stewardship Act - The LEC voiced their appreciation for the letter of support sent by the Commission on behalf of Senate Bill 1420, specifically their endorsement of Section 403 on cooperative enforcement. The LEC agreed it will continue to provide support as individual members and as a collective body. The LEC will confer via conference call to plan future endorsement strategies to shepherd this legislation through Congress.

FIN Program Confidentiality Issues - D. Donaldson reported that the confidentiality protocol developed and adopted by the LEC at its meeting in March was adopted by the FIN Committee. Law enforcement representatives are authorized users of the data and follow the same policies as other authorized users.

Public Outreach - At the March meeting, the Commission agreed to the LEC's request to play a more aggressive public outreach role regarding commercial and recreational safety regulations and safe boating practices. **J. Mayne moved to recommend the LEC specifically request the following: space on the GSMFC web page for vessel safety regulations including a direct link from the GSMFC web page to the U.S. Coast Guard vessel safety web page and links from the GSMFC web page to the five state agency web pages. This portion of the GSMFC web page should also include timely information on openings and closings using web space and through the broad distribution of news releases by Commission staff upon receipt from LEC members. The motion was approved by unanimous acclamation.**

J. Mayne reported that the Commission's letter of endorsement on Louisiana's trip ticket program sent to the state legislation was well received. Crawfish and catfish were written out of the program for a five-month period but will be added back in January 2000. It has become clear since the program began that the amount of information that had previously gone unreported was phenomenal. Cases made for nonreporting and falsifying reports have shown biologists just how much more information can be obtained.

**The minutes of the meeting held March 17, 1999 were approved as written.**

### **Coastal Stewardship Act**

D. McKinney reminded the group that at their last meeting a basic briefing was given on the Coastal Stewardship Act initiated by Senator Kerry and Senate Bill 1420 which has a component of enforcement funding built into it under Section 403. Since then, this group has generated support through various means including letters to Congress. Those actions culminated in a meeting of enforcement heads and the Administrator of Fisheries, Penny Dalton, on October 7. State representatives were also able to meet individually with the new Chief of Enforcement, Dale Jones, concerning the implementation of Section 403.

Two areas of concern were: 1) science and enforcement were mingled together in the wording of Section 403; separation was needed so that enforcement clearly had its own funding with its own avenues for expenditures and was not adjunct to the scientific data base system also in the section, and 2) how to get the language for enforcement so that it may be transferred into another bill that may move forward (i.e., Senate Bill 25 is similar but does not have an enforcement component). As a result of the meeting and conversations with Dick Murray in New England, who has been encouraging Senator Kerry's staff, the language of Section 403 was actually bifurcated so that enforcement is a stand-alone provision. This will make it much easier to ensure that the enforcement section is a rider in whichever bill that Congress moves forward.

According to Senator Kerry's staff there is still an outside possibility that S. 1420 will be considered this year; others believe that Congress already has enough on its plate, and S. 1420 will not be considered. However, all state Congressional offices agree that if the Bill is not considered, passed, and funded this year, it will be in 2000. This group has done a good job in supporting the Bill, talking to the right people, and influencing the process to enforcement's advantage.



Discussion ensued whether the group should contact recreational and commercial organizations to rally support for the Bill. McKinney pointed out Senator Lott's response to the Commission's letter of support for the Bill. Congress has envisioned Coastal Stewardship Act funds (from oil revenues) being used for all Americans, not just those in the coastal states. These funds will be used to enhance recreational capabilities in wilderness activities across the United States. One can infer that this indicates there will be more than one group interested in securing those funds. The Department of the Interior is one example. While we should be vigilant in our efforts to get funds for cooperative marine enforcement, an initiative for support from recreational and commercial fisheries sectors may not be timely as yet.

D. McKinney suggested a conference call to further discuss support strategies for the legislation. All agreed, and J. Waller requested D. McKinney take this request for G. Proulx to schedule a conference call to discuss and decide when to garner additional support for the enforcement portion of the Coastal Conservation Act.

The Committee noted the productivity achieved from meetings with Penny Dalton, Dale Jones, and Alice McKenna (NMFS Counsel). **The LEC requested a letter be written on their behalf thanking Ms. Dalton for the mutually-beneficial meeting and suggest that similar meetings be held on a routine (perhaps annual) basis.**

### **Gulf-wide Strategic Plan for Fisheries Enforcement**

D. McKinney explained that if this group moves ahead under the assumption that funding is available under 403, the next question is how the money will be distributed. This organization would be stronger if a block-approach is used. McKinney proposes the development of a joint strategic plan on enforcement operations conducted in the Gulf of Mexico region. First, the strategic plan will show the interlinking cause and effect between the five states and the federal government to enforce living marine resource laws and regulations for the betterment of the Gulf. If a state is not funded to the level required under Section 403, it would be a detriment not only to that state but also to natural resource law throughout the entire Gulf.

If funding is obtained through Section 403, there will be, of course, a certain amount of scrutiny at how the money is spent. The Commission and Council are excellent public forums to report how money is used to support fishery management plans and management regimes that both managers and scientists implement to conserve and enhance resources. Secondly, a strategic plan will provide a vehicle for yearly reporting of accomplishments and milestones achieved. Thirdly, a strategic plan may help the idea of a continuous stable funding for the enhancement of natural marine resources. Reporting to the Commission and Council on a yearly basis will provide a check and balance on the spending of federal funds for this effort.

**By consensus, the Law Enforcement Committee agreed to develop a Gulf-wide strategic plan for fisheries enforcement.** The strategic plan will strengthen the group's position in support of Section 403 of the Coastal Stewardship Act. The main elements of the plan will include a vision statement, mission statement, and goals and objectives. This document can accurately reflect the views of enforcement and discuss the elimination of overlapping and obscure regulations and clarify existing regulations. The Committee suggested a five-year plan with yearly goals outlined. The GSMFC and GMFMC are excellent vehicles to report milestones and accomplishments. A draft vision statement was developed which reads as follows: **Improve regulatory compliance through cooperative law enforcement and efforts to enhance protection and conservation of shared living marine resources throughout the Gulf of Mexico.**

### **Gulf-wide Data Base of Licenses/Fees**

J. Waller explained that it would be a useful to have an easy reference of state licenses and their fees. The GSMFC web page would be a good place to list or link this information together. **By consensus, the LEC will request space on the GSMFC web page to include a Gulf-wide data base of recreational and**

**commercial licenses and fees for each state and their exceptions/reciprocal agreements.** The LEC members committed to provide GSMFC staff real-time updates.

### **NMFS Report**

D. McKinney reported that MOUs are in place for Louisiana, Florida, and Alabama. Mississippi should be ready after more discussion, and Texas is upcoming.

### **USCG Report**

Lt. D. Fiedler reported the 8<sup>th</sup> District had 662 cutter days, and 10,338 hours of small boat patrol. There were approximately 10,000 law enforcement boardings. Of those boardings, there were 61 Magnuson/Stevens violations, 99% compliance; 2,155 TEDs boardings finding 49 violations, 98% compliance; and 963 BRDs boardings with 44 violations, 94% compliance. There were 1,192 commercial fishing vessel safety violations issued, 60% compliance. Seventy-six of those vessels were terminated and brought off the water for significant violations. Two hundred, twenty-five Mexican fishing vessels were observed fishing in U.S. waters, and 146 violations were issued for non-U.S. master situations. The patrols have discovered 169 undocumented aliens on fishing vessels. Texas and Louisiana are the two hot spots for illegal aliens. They work the oyster boats in Louisiana and shrimp boats in Texas. The problem is not going to go away; it's a cheap form of labor. The Coast Guard is working through channels to increase fines and penalties to act as deterrents.

D. Rose wished to relay a concern to the 8<sup>th</sup> District. The two stations on the Mississippi Coast (Gulfport and Pascagoula) close nightly; radio traffic is not monitored. Everything must then be handled either through New Orleans or Mobile. At night when state patrols are on the water, it may be impossible to reach the Coast Guard by radio. This leaves a noted absence on the part of federal fisheries enforcement. Are there any plans to man these stations 24 hours a day? D. Fiedler indicated that this may be a product of streamlining, and he will look into the situation.

### **State Reports**

Florida - B. Buckson reported that the most interesting thing happening in Florida is the merger that went into effect in July. This action was passed in the last November election; it was a constitutional amendment that was affected by legislative changes and created a merger between the inland and marine agencies. Florida now has probably the largest conservation law enforcement agency in the nation; there are just under 700 sworn officers. It is the second largest law enforcement agency in the state which allows a better bargaining power in legislative issues. It may take several years to really get settled in; the agency is working through logistical matters at this time.

Beginning this legislative session the stone crab fishery will begin to limit effort through a tag program similar to the lobster fishery in south Florida. This program will ultimately reduce the number of traps that are fished for stone crabs. Another interesting species that is beginning to be regulated is the horseshoe crab. These animals are used as bait in the eels, conch, and whelk fisheries. Most of the product is shipped to the Atlantic coast. Gill net limitation is still being battled in court; enforcement of the net law continues to be a challenge.

Alabama - The Coast Watch Program has expanded to include northern Alabama. Response is very good; many residents travel down to the coast for fishing trips. D. Fiedler noted that the Alabama program is impressive and has been well received by both commercial and recreational user groups.

Mississippi - T. Bakker reported that unlike Florida, the State of Mississippi split marine enforcement from the Department of Wildlife, Fisheries and Parks in Senate Bill 2804 which became effective July 1. The law

enforcement division is now under the direction of the Mississippi Department of Marine Resources. Although the division is in transition, the split is a positive change and has allowed for a larger budget and increased manpower. The division is in a hiring mode and has ten openings.

Louisiana - J. Mayne reported that their department is also experiencing a manpower shortage and has 24 vacancies across the state. Louisiana's trip ticket program was instituted on January 1. Since then they have identified 9,000 commercial fishermen (of 17,000) who have yet to submit a ticket. This is staggering - over half of the commercial fishermen in the state are not reporting any product. Dealers in the same category were also identified.

The mullet season opened Monday, and prices seem to be higher this year. Several pieces of legislation were passed including a bill which moved their venue out into the EEZ. This allows district courts to prosecute cases in federal waters. Bills were passed to regulate the harvest of stone crabs and prohibit the sale of undersized oysters and fish.

Texas - D. Johnston noted that it has been a busy year legislatively. The legislature passed a limited entry finfish management program. The language is being written for the Texas Parks and Wildlife Commission to put the program in place September 1, 2000. Everything will fall under a limited entry plan except oysters and the Gulf shrimp industry. Legislation was passed that gave the department the authority to deny a license sale based on nonpayment of civil restitution. Collection of civil restitution fines is a major problem, and the Attorney General's office was limited in what they could take to court. The Texas Parks and Wildlife Department entered into a MOU with the National Marine Fisheries Service. Joint operations have since occurred with the NMFS and USCG agents. These operations benefitted Texas personnel; they now have a closer working relationship with those agencies. Finally, TPWD is under Sunset Review for the next two years until the next legislative session.

### Law Summary Update

C. Yocom reported that information for the last state was received this week. She will update that portion and ask the editor to review the publication next week. It should go out on bid for printing shortly and be ready to distribute in mid-December.

### Election of Chairman

**T. Bakker moved to elect J. Waller as Chairman. J. Mayne seconded the nomination, and Chairman Waller was reelected by unanimous acclamation.**

### Other Business

The Committee discussed, at length, the problem in allowing undersized product to be shipped to another state (for example, crabs being shipped from Louisiana to Alabama for processing). Marine enforcement in Alabama have seized undersized product to the point that some Alabama dealers have begun to ship the product back when they realize it is under the legal size. Louisiana wants Alabama to prosecute their dealers for accepting the product. Alabama wants Louisiana dealers to be held responsible for the illegal product. J. Mayne noted that numerous attempts have been made to have legislation passed to that effect. All agreed a solution is needed. The LEC agreed to point out this problem at the Commission Business Session.

**There being no further business, the committee adjourned at 12:11 p.m.**

APPROVED BY:  
  
COMMITTEE CHAIRMAN

**STATE-FEDERAL FISHERIES MANAGEMENT COMMITTEE  
MINUTES  
Thursday, October 21, 1999  
Biloxi, Mississippi**

Chairman Larry Simpson called the meeting to order at 1:15 p.m. The following members and others were present:

**Members**

Doug Frugé, USFWS, Ocean Springs, MS  
Tom McIlwain, NMFS, Pascagoula, MS  
Vernon Minton, ADCNR, Gulf Shores, AL  
Russell Nelson, FFWCC, Tallahassee, FL  
Corky Perret, MDMR, Biloxi, MS  
Mike Ray, TPWD, Austin, TX  
John Roussel, LDWF, Baton Rouge, LA  
Larry Simpson, GSMFC, Ocean Springs, MS

**Staff**

Gregg Bray, Survey Coordinator, Ocean Springs, MS  
Dave Donaldson, Data Program Manager, Ocean Springs, MS  
Ron Lukens, Assistant Director, Ocean Springs, MS  
Jeff Rester, SEAMAP/Habitat Program Coordinator, Ocean Springs, MS  
Tom Sminkey, Data Programmer/Analyst, Ocean Springs, MS  
Madeleine Travis, Staff Assistant, Ocean Springs, MS  
Steve VanderKooy, IJF Program Coordinator, Ocean Springs, MS

**Others**

Mike Brainard, MDMR, Biloxi, MS  
Don Christy, Jackson, MS  
Kim Dawson, NMFS, Pascagoula, MS  
Chris Dorsett, GRN, New Orleans, LA  
Jim Duffy, ADCNR, Dauphin Island, AL  
Bill Hogarth, NMFS, St. Petersburg, FL  
Philip Horn, Pascagoula, MS  
Rene Labadens, NMFS, Pascagoula, MS  
Frederic Miller, GSMFC Commissioner, Shreveport, LA  
Chris Nelson, GSMFC Commissioner, Bon Secour, AL  
Don Perkins, GSMFC Commissioner, Houston, TX  
George Sekul, GSMFC Commissioner, Biloxi, MS  
Joe Shepard, LDWF, Baton Rouge, LA  
John Tennyson, NMFS, Pascagoula, MS  
Jim Twiggs, Biloxi, MS  
Ginny Vail, FFWCC, Tallahassee, FL  
Tom VanDevender, MDMR, Biloxi, MS  
Steve Winters, NMFS, Pascagoula, MS

**Adoption of Agenda**

The agenda was adopted as amended.

### Approval of Minutes

The minutes of the meeting held on March 17, 1999 in New Orleans, Louisiana were approved as presented.

### Menhaden Advisory Committee Report

S. VanderKooy reported on the Menhaden Advisory Committee (MAC) meeting. At that meeting J. Smith of National Marine Fisheries Service (NMFS) Beaufort Lab reported that preliminary indications on the 1999 menhaden season show 643,000 metric tons harvested for reduction. This is a 47% increase over last year and a 26% increase over the last five year average. Smith also noted that with the National Ocean Service (NOS) now at the Beaufort Lab, approximately 80% of the staff is NOS personnel.

VanderKooy reported that L. Simpson told the MAC that funding for the menhaden port samplers have been included in the Fisheries Information Network (FIN) budget. By incorporating funding for the port samplers into the data collection program, it is possible to train the samplers in advance of the menhaden season.

VanderKooy noted that B. White of Omega Protein, Inc. in Houston, Texas gave a presentation on the recent progress made by industry in bycatch reduction using the Mark IV hose cage. As a result of using this device, large fish bycatch has been significantly reduced, however there has been a decrease in pumping efficiency and a greater loss of catch.

VanderKooy reported on the Menhaden Fishery Management Plan (FMP) and noted that the first six sections have been revised and updated. The remainder of the revision of this FMP should be completed and in draft form by March 2000. V. Guillory was re-elected as Chairman. **M. Ray moved to accept the Menhaden Advisory Committee report. The motion was seconded and passed unanimously.**

### Commission's Role in Bycatch Reduction and Assessment

L. Simpson noted that Commissioner Miller had requested information and discussion on this topic. Material was distributed which included information concerning the reduction of bycatch in state waters. During discussion, F. Miller noted that there is a national bycatch standard in federal waters, and the states have various bycatch reduction activities. Miller suggested that the GSMFC may be able to develop a standardized approach to bycatch reduction with recommendations made to the states. Miller noted that he had prepared a presentation for the Commission Business Session which includes suggested actions.

B. Hogarth of NMFS stated that they recently held a bycatch reduction device (BRD) workshop and included fishermen from the east coast and the Gulf states since the use of BRD's is still a very controversial issue. Attempts are being made to certify additional BRD's, with guidelines regarding BRD's in shrimp trawls being handled through the Councils. J. Roussel noted that in developing fishery management plans for some species, bycatch could be included. D. Donaldson stated that in the Fisheries Information Network (FIN) there is a bycatch component for both commercial and recreational fisheries. This issue will be further explored at the Commission Business Session.

### Status of IJF Fishery Management Plans and Other Activities

Flounder Fishery Management Plan (FMP) - S. VanderKooy reported that the Technical Coordinating Committee (TCC) has until December 15, 1999 to comment on this FMP. A revised draft incorporating these comments and a mail ballot will be sent to TCC members after January 1, 2000. If approved, the flounder FMP will be presented to the State-Federal Fisheries Management Committee (S-FFMC) at the March meeting and then released for public review and comment. The final step will be to seek approval from the Commission.

M. Brainard of the Flounder Technical Task Force (TTF) gave a brief presentation to the Committee on the development of the Flounder FMP. This Plan was approved for development by the S-FFMC in 1995 and the TTF met for the first time in April 1996. Some of the work from Louisiana's management plan for flounder was utilized. Brainard reported on the biology, habitat, and regulations regarding Gulf and southern flounder. Based on the stock assessment, there is clearly a need for speciated flounder landings information and other data.

Blue Crab FMP - VanderKooy reported that the Blue Crab FMP is temporarily on hold due to some revisions being made to the stock assessment. This Plan is still in review in the TCC and a formal presentation to the S-FFMC is planned for the March 2000 meeting.

Spotted Seatrout FMP - VanderKooy reported that the Spotted Seatrout FMP is currently being reviewed by the TCC. Upon receiving TCC approval, this Plan should be presented to the S-FFMC at the March 2000 meeting.

VanderKooy noted that the Menhaden FMP is being revised. The first half of the Plan is in draft form and the second half, which includes the economic and sociology sections needs updating. The stock assessment completed by D. Vaughan will be included. These activities should be completed by March. The striped bass FMP will also undergo revision following the completion of spotted seatrout and flounder.

VanderKooy reported that the Stock Assessment Team (SAT) has recommended a renewed effort in the development of an otolith handbook to aid in stock assessment training. VanderKooy noted that the new approach would include the state technicians actually involved in the cutting and reading process. VanderKooy and J. Duffy of Alabama will organize the group for a meeting early in 2000. Since C. Wilson of Louisiana State University had been working on a similar project, it was suggested that he be contacted to avoid duplication of effort. **R. Nelson moved to have GSMFC staff proceed with the development of the otolith handbook. The motion was seconded and passed unanimously.** An Otolith Handbook Work Group will be formed, the makeup of which will include two members from each Gulf state and personnel from NMFS Panama City Laboratory. Six meetings will be held over the course of the next two years utilizing state laboratories for training. Staff will be responsible for the product.

VanderKooy reported that contact had been made with L. Kline of the Atlantic States Marine Fisheries Commission (ASMFC) to discuss the possibility of joint stock assessment training. Kline noted that workshops are held annually on the east coast and personnel from the Gulf states would be welcome to attend. A curriculum textbook is being developed to aid in standardization and consistency.

VanderKooy distributed a matrix and reviewed which FMP's were in revision, out of print, out of date, etc. The Oyster FMP is out of print and probably would be a good candidate for revision or reprinting in the future.

### **FMP Compliance Report Card**

Committee members reviewed the information contained in the report card making corrections, clarifications, and editorial changes. Changes to this document represent the administrative portion of the meeting.

### **Data Collection Program**

FIN Overview and Program Integration - D. Donaldson noted that at the last S-FFMC meeting, members requested an overview of the data collection program. J. Shepard of Louisiana Department of Wildlife and Fisheries (LDWF), who has been instrumental in the development of the data collection program, gave a presentation on this subject. Shepard gave a brief history of the development of this program, beginning with the problem of duplication of effort in the collection of data, and the loss of resources on both the state and

federal levels. Shepard noted that the mission of the Fisheries Information Network is to cooperatively collect, manage, and disseminate marine commercial and recreational fisheries statistical data for the conservation of fishery resources in the southeast region and to support the development and operation of a national program.

Shepard explained that the Commercial Fisheries Information Network (ComFIN) is comprised of a data collection component, a data management component, and an outreach component. The trip ticket program is the basis of the data collection program. This program provides landings data and also provides a universe from which to sample. Shepard noted that this information is accessible from one database in a standardized format.

Shepard noted that the Southeast Recreational Fisheries Information Network (RecFIN[SE]) has components similar to the ComFIN. A database of all charter boats in Louisiana, Mississippi, Alabama, and the west coast of Florida was compiled and is the foundation of the Charter Boat Pilot Survey. The methods used in this pilot program have been adopted by the National Marine Fisheries Service for inclusion in the Marine Recreational Fisheries Statistics Survey (MRFSS) beginning in January 2000. Shepard described the operation process of the RecFIN(SE) and ComFIN Committees, which includes various work groups, subcommittees, and finally, oversight by the S-FFMC.

R. Lukens reported to the Committee on actions taken concerning the GulfFIN line item at the recent FIN Committee meeting. Lukens noted that NMFS representatives on the FIN Committee had expressed concern that funds appropriated under the GulfFIN line item are not available to federal partners in the program. As a result of a motion made by the FIN Implementation Work Group, the FIN Committee moved to have the S-FFMC address the issue of how the GulfFIN line item should be allocated, i.e. to state partners only or both state and federal partners.

L. Simpson noted that GulfFIN line item funds are currently being used for some federal activities, i.e. the menhaden and head boat sampling programs. Committee discussion ensued and **R. Nelson moved that the State-Federal Fisheries Management Committee is currently satisfied with the procedures in place for prioritizing and disbursing GulfFIN funds. The motion passed with NMFS abstaining.**

Discussion of Cooperative Statistics Program (CSP) Funding - R. Lukens noted that Congress had requested a report as part of the GulfFIN transition funding. Included in this report was a request for funds which totaled \$7,000,000, with this entire amount being needed for the states and the GSMFC to perform data management and collection activities.

Lukens noted that the S-FFMC, at a meeting held in New Orleans last May, discussed how to mesh the programs currently in existence into the new processes. The trip ticket program will absorb some of the CSP activities, giving the NMFS additional resources in the future. L. Simpson stated that N. Thompson of NMFS noted that the budget for 2001 is currently being developed, and NMFS would like to withhold CSP funding currently being provided to the states. Those funds would be used in the Southeast Fisheries Science Center in Miami to enable them to support their data activities.

Information was distributed to Committee members which outlined the distribution and expenditure of CSP funds for each state. Lukens raised the question that if, by January 1, 2001 these funds are no longer available to the states, will GulfFIN funding be sufficient to carry on these activities. Lukens also noted that it had been agreed not to replace existing activities with the GulfFIN money.

T. McIlwain explained that the NMFS requires some flexible funds to respond to Council requests for data collection. L. Simpson noted that it is still to be determined how these programs will be integrated. Lukens stated that the FIN Committee agrees that state and federal data collection needs to be seamless concerning the type of data collected.

The S-FFMC expressed a great deal of concern over the NMFS proposal to withhold the CSP funding, indicating that it is premature to begin that process until more is known about what effect implementation of the state trip ticket programs will have on current activities. However, since the issue was brought forward by NMFS, the S-FFMC agreed to have staff communicate with N. Thompson of NMFS regarding budget concerns, while state members will investigate their data collection programs to determine how the loss of CSP funding will affect the state's ability to continue collecting the current type and level of data.

### **Habitat Program Report**

J. Rester reported to the Committee on recent Habitat Program activities. Approximately 22,000 habitat brochures were printed and distributed to the Gulf states, Sea Grant agencies, cooperative extension services, piers and marinas, and at fishing license outlets. In April the Habitat Subcommittee began work on the fishing impacts annotated bibliography. Over 450 citations and references will be included. There is a fish habitat poster in development, with Texas Parks and Wildlife Department artists currently working on this project. The draft poster should be ready for the Spring meeting.

Rester reported that the Gulf of Mexico Fishery Management Council (GMFMC) is currently being sued over the fishing impacts section of the Essential Fish Habitat (EFH) Amendment. This lawsuit was filed in April and has been amended twice to include, among others, other Fishery Management Councils. Rester noted that he attended a meeting in September which included NMFS personnel, EFH coordinators, and habitat personnel from the various Fishery Management Councils to discuss issues relating to the development of the EFH Amendments. Future plans were discussed as well as the fishing impacts bibliography. NMFS headquarters agreed to fund further research and printing costs. This should be available in print and online by January 2000.

Rester reported that the GMFMC Habitat Advisory Panels from the Gulf states met throughout September to review the Council's policies, procedures, and projects affecting habitat in the Gulf of Mexico. After compiling comments and concerns of Advisory Panel members, Rester noted that a meeting was held with habitat personnel from the GMFMC, NMFS, the EFH coordinator, and the Chairman of the Habitat Protection Committee. This information will be presented at the GMFMC November meeting.

### **Commercial/Recreational Fishery Advisory Panel Report**

P. Horn reported on several presentations that were given to the Commercial/Recreational Fisheries Advisory Panel (C/RFAP). P. Burchfield, Director of the Gladys Porter Zoo in Brownsville, Texas, gave an informative presentation on the history and direction of the Kemps Ridley sea turtle program. Another presentation was given by Drs. S. Thomas, F. Coleman, and W. Keithly on marine reserves. This presentation dealt with the results of GMFMC workshops held throughout the Gulf. The views of proponents were presented, as well as the economic impact of such a program. Horn stated that D. Donaldson's report on the FIN program included information on federal fishing codes currently in use in log books and Florida trip tickets. Donaldson noted that with more accurate information, better data will become available for fishery management plans. Horn reported that S. VanderKooy then gave a presentation on current fishery management plans, either in revision or development.

Horn reported that B. Zales led a discussion on limited entry for the for-hire industry. Since the GMFMC is considering a plan for limited entry in federal waters, the C/RFAP is addressing this issue in state waters. The C/RFAP moved to recommend that the GSMFC begin the development of a limited entry program for the for-hire industry and the recreational fishery. This should be a coordinated state effort through the Commission and limit the scope to reef fish and mackerel.

Horn reported on a presentation by B. Perkins of Auburn University Extension and Research Center. Perkins and P. Barber then discussed a situation involving Alabama crab processors and the Food and Drug



Administration (FDA). Two years ago the Hazard Analysis-Critical Control Point (HACCP) plan was developed. A HACCP plan was developed for each crab processing plant to improve food safety and minimize the potential for contamination. The processors feel that FDA officials have been unfairly inspecting plants using unauthorized HACCPs. As a result of this discussion, the Commercial Fisheries Advisory Panel (CFAP) made the following motion: that the GSMFC explore the development of an entity similar to the Interstate Shellfish Sanitation Conference (ISSC) to provide coordination between state and federal regulators and the blue crab processing industry.

As a result of the actions and recommendations made by the Commercial/Recreational Fishery Advisory Panel, **R. Nelson moved to have staff write a letter to the states ascertaining their interest and authority to develop effort management programs for the for-hire sector, and to write a letter to the GMFMC stating that the states feel that a limited entry program might not be effective or equitable unless there were similar programs at the state level. The motion was seconded and passed unanimously.**

The S-FFMC agreed that the issue concerning the blue crab processors be given to the Technical Coordinating Committee (TCC) for consideration by the Crab Subcommittee and possibly the Law Enforcement Committee.

#### **GSMFC Committee Regarding Sportfish Restoration**

R. Lukens reported that he had recently attended a meeting dealing with upcoming changes in the federal aid program. Lukens noted that, other than individual contact, there is no mechanism in place in the GSMFC office for tracking and responding to changes associated with the federal aid program. Lukens asked Committee members for their suggestions and input on this situation. After Committee discussion, it was agreed that staff should network with federal aid coordinators.

#### **Finalization of State Directors' December Meeting**

The Committee agreed to hold the State Directors' meeting on December 5, 6, and 7, 1999 in Mississippi. Details will be forthcoming.

#### **Other Business**

R. Nelson reported that the Commissioners from Florida had requested that a joint meeting be held with Commissioners from Texas, then a suggestion was made to hold a meeting with the Commissioners of all the Gulf states to share information and experiences. Nelson asked the Committee for their input on such a meeting.

L. Simpson suggested that the GSMFC would be able to provide a meeting room and social activity during the GSMFC Spring 2000 meeting in Orange Beach, Alabama. This issue will be discussed further at the Commission Business Session.

#### **Election of Chairman**

The Committee discussed the history of the leadership of S-FFMC, formerly the State-Federal Fisheries Board. Since 1978 this group was lead by the Executive Director of the Commission who was a non-voting member. **R. Nelson moved to make L. Simpson the facilitator of the State-Federal Fisheries Management Committee. The motion was seconded and passed unanimously.**

**There being no further business, the meeting was adjourned at 5:20 p.m.**

COMMISSION BUSINESS MEETING  
MINUTES  
Friday, October 22, 1999  
Biloxi, Mississippi

APPROVED BY:

COMMITTEE CHAIRMAN

+ G. W. P.  
all corrections  
made

Chairman George Sekul called the meeting to order at 8:30 a.m. L. Simpson noted that a quorum was present. He reviewed pertinent rules and regulations regarding the appropriate meeting procedures.

The following Commissioners and/or proxies were present:

**Commissioners**

Walter Penry, Alabama House of Representatives, Daphne, AL  
Vernon Minton, ADCNR/MRD, Gulf Shores, AL (*Proxy for James Martin*)  
Chris Nelson, Bon Secour Fisheries, Bon Secour, AL  
Mike Ray, TPWD, Austin, TX (*Proxy for Andrew Sansom*)  
L. Don Perkins, GSMFC, Houston, TX  
George Sekul, Chairman, Biloxi, MS  
Corky Perret, MDMF, Biloxi, MS (*Proxy for Glade Woods*)  
John Roussel, LDWF, Baton Rouge, LA (*Proxy for James Jenkins*)  
Frederic L. Miller, GSMFC, Shreveport, LA  
Russell S. Nelson, FFWCC, Tallahassee, FL (*Proxy for Allan Egbert*)

**Staff**

Larry Simpson, Executive Director, Ocean Springs, MS  
Ron Lukens, Assistant Director, Ocean Springs, MS  
Ginny Herring, Executive Assistant, Ocean Springs, MS  
Nancy Marcellus, Administrative Assistant, Ocean Springs, MS  
Dave Donaldson, Data Program Manager, Ocean Springs, MS  
Steve VanderKooy, IJF Program Coordinator, Ocean Springs, MS  
Jeff Rester, SEAMAP/Habitat Program Coordinator, Ocean Springs, MS

**Others**

Doug Frugé, USFWS, Ocean Springs, MS  
Tom McIlwain, NMFS, Pascagoula, MS  
Jerry Waller, ADCNR, Dauphin Island, AL  
John T. Jenkins, ADCNR, Dauphin Island, AL  
Jimmie Martin, B & J Martin, Inc., Cut Off, LA  
Gail Martin, B & J Martin, Inc., Cut Off, LA  
Ginny Vail, FFWCC, Tallahassee, FL  
Tom Schmidt, National Park Service, Homestead, FL  
David A. Cinalli, 7<sup>th</sup> Coast Guard District, Miami, FL

**Adoption of Agenda**

The agenda was adopted as presented.

**Approval of Minutes**

The minutes of the meeting held March 17, 1999, were approved with the following correction: page 155, NMFS report, 2<sup>nd</sup> paragraph. Words added are in bold. .... and Bonné **Carre** disaster **funds** .....

## GSMFC Standing Committee Reports

Law Enforcement Committee (LEC) - J. Waller, Chairman for the LEC reported that the LEC met Thursday, October 21, 1999. The Committee continues do work on the Fisheries Information Radio initiative. **The LEC requested the Commission staff invite a representative of the FCC to the March meeting for continued discussions on this topic with the LEC and the C-RFAP.**

Other topics discussed included strategies in support of the Coastal Stewardship Act (Senate 1420); adoption of the confidentiality protocol developed by the LEC for the FIN Committee; and, the development of a draft vision statement for a Gulf-wide Strategic Plan for Fisheries Enforcement.

Other requests made by the LEC were: 1) **To provide broad distribution of timely information by adding space to the Commission web page for vessel safety regulations, a link to the U.S. Coast Guard vessel safety web page, and, a link to the five Gulf States agencies;** 2) **To have Commission staff to write a letter of thanks to Penny Dalton for the meeting she held to discuss enforcement issues and concerns;** 3) **To have Commission staff to invite Dale Jones, (Chief of NMFS Enforcement) to attend March 1999 meeting; and,** 4) **To provide space on Commission web page for a Gulf-wide data base of recreational and commercial license and fees for each state.**

The LEC discussed a current problem with undersized products being sent from one state to another. Specifically, undersized crabs being shipped from Louisiana to Alabama. J. Waller indicated that the dealers in Alabama were unaware that these products were undersized at the time of purchase (under 5"), and enforcement were issuing citations to the dealers who have undersized crabs in their possession. He stated that some of the Alabama dealers have sent the undersized crabs back to Louisiana, thus they are committing a reverse Lacey Act violations. Enforcement cannot seize the crabs without issuing a citation and enforcement officers feel that this is unfair to the dealers in Alabama. Louisiana dealers, under Louisiana regulations, are not responsible for the undersized crabs. The LEC spent a great deal of time discussing this issue and cannot resolve the problem. J. Waller asked if the Commission could assist the Committee in finding a solution to this problem. J. Roussel pointed out that both Louisiana and Alabama have a 5" minimum for fishermen. He stated that Louisiana dealers who purchase undersized crabs are not held responsible if the undersized crabs are purchased in a crate that identifies the fishermen. He asked J. Waller why this same mechanism could not apply to the Alabama dealers as well. J. Waller explained that fishermen have suggested that the crabs were legal when sold to the Louisiana dealer and that it was not their responsibility for undersized crabs being sold in Alabama after they have left the dealer. He did say that he was going to hold a meeting with Alabama dealers and invite Louisiana enforcement officers to attend and provide information. C. Nelson asked if it was economically beneficial to sell undersized crabs. The dealers are paying for them so it must be economically feasible. If they did not pay for the undersized crabs the problem would end. Perhaps the size limit needs to be re-evaluated. J. Roussel stated that Louisiana is taking steps to help stop this situation. One method is a requirement that the fishermen use an escape ring on crab traps. Louisiana has also increased penalties for taking undersized crabs. Hopefully this will drastically reduce the occurrence of this problem. V. Minton stated that he would work with J. Waller during the planned meetings with dealers and enforcement personnel and report back to the Commission.

J. Waller was elected Chairman for the upcoming year.

**C. Perret made a motion to approve J. Waller's report including requests. F. Miller seconded. The motion passed.**

Technical Coordinating Committee (TCC) Report - C. Perret reported that the TCC met on Thursday, October 21, 1999. The TCC received a report from Marilyn Barrett-O'Leary from LSU Sea Grant on Nonindigenous Aquatic Nuisance Species Prevention and Control Act. S. VanderKooy updated the TCC

on Flounder, Blue Crab and Spotted Seatrout FMPs. The Committee reviewed and accepted a Draft Commission Mariculture Policy, which was distributed to the Commissioners for review.

The TCC received reports from the Anadromous Fish Subcommittee, Crab Subcommittee, SEAMAP Subcommittee, Data Management Subcommittee, Artificial Reef Subcommittee, and the Habitat Subcommittee. The TCC presented a plaque of appreciation to Ken Savastano for his 17 years of service with the SEAMAP Program. The TCC endorsed the Crab Subcommittee's effort to gather information on exotic crab species and to seek funding for a poster to identify these crabs.

Corky Perret was elected Chairman for the upcoming year. He appointed John Roussel Vice Chairman.

**F. Miller motioned to approve the report and revised resolution as presented. C. Nelson seconded. The motion passed.**

State-Federal Fisheries Management Committee (S-FFMC) Report - L. Simpson stated that the S-FFMC met Thursday, October 21, 1999. The Committee received a report from the Menhaden Advisory Committee (MAC). He reported that the menhaden industry landings for 1999 are 47% above last years landings, and 26% above the five year average. The industry continues efforts to reduce the shark bycatch. The MAC received a demonstration on a bycatch reduction modification of the hose cage. It estimated the reduction of sharks entering the hold from various efforts in design and equipment to be on the order of 50%.

The S-FFMC were updated on the status of IJF FMPs, and reviewed the FMP Compliance Report Card. The IJF Program is also addressing the importance of stock assessment and the need for training new state personnel to expand the corps of individuals with this expertise. Other IJF activities include the development of an Otolith Handbook.

During a report on the GSMFC Data Collection Program, a concern regarding funding for the Cooperative Statistics Program was discussed. It has been reported that funding to the states may not be available in FY2001 from the NMFS due to redirection of these funds. This situation is being reviewed and the status will be reported on. Other discussions during this report included the interpretation of the disposition of Gulf FIN line item funds. The S-FFMC interpretation is that the funding is directed to implement state activities and to support Commission's administration and coordination of those activities.

The Habitat Program reported that approximately 22,000 habitat brochures have been distributed in the Gulf. The GSMFC Habitat Committee is working with the State of Texas on drafting a habitat poster for distribution. Other GSMFC habitat activities include the compilation of a fishing impacts annotated bibliography that may be available in April 2000.

The S-FFMC received a report from the Commercial/Recreational Advisory Panel C/RFAP. Topics discussed by this group included the Kemp's Ridley Turtle Program; marine reserves; data collection; limited entry; and, blue crab concerns. The C/RFAP recommended that the Commission begin the development of a limited entry program for the for-hire industry and the recreational fishery. This should be a coordinated state effort through the Commission and limited in scope to reef fish and mackerel. Other requests of this committee included a suggestion that the Commission explore the development of an entity like the ISSC to provide coordination between state and federal regulators and the blue crab processing industry. These recommendations and suggestions do not require action or approval, and will be given consideration and review during the next few months.

The next State Directors meeting will be held December 5-7, 1999.

F. Miller discussed comments that he is hearing from the environmental community who are outside of the Gulf and have no fishing interest. These reports reveal that the environmental community is making bycatch

a hot issue. He recommends that the Commission and states take heed to the menhaden industry's approach to this issue and actively address bycatch reduction issues before others do. He related concerns regarding the discard mortality in the recreational snapper fishery which currently has a minimum size limit of 18". Recreational fishermen have recommended a lower size limit to deal with the discard mortality. The Councils are addressing some of these issues but F. Miller would like to see the Commission in a leadership role in the effort to reduce bycatch and habitat destruction. He stated that it is hard to separate bycatch reduction from the destruction of habitat. Each state is currently addressing some bycatch reduction issues. J. Roussel stated that he felt that current efforts are addressing this issue through FMPs and other strategies such as compiling an annotated bibliography on fishing impacts. F. Miller asked the Commissioners to review several suggested actions and to revisit this issue at the March 2000 meeting. He would like to see the Commission develop a uniform standard for the Gulf region, similar to Standard 9. Perhaps even draft a bycatch and habitat destruction reduction statute that could be recommended to the states. R. Nelson passed around a draft brochure that has been developed in Florida to address how to handle and release fish in an effort to reduce fish mortality. He feels that F. Miller is correct in recommending that the Commission become actively involved in this issue. D. Frugé and T. McIlwain also agreed that this was a hot topic and that the Commission should be involved, perhaps with outreach programs. J. Roussel stated that a Gulf-wide uniform standard for bycatch reduction would be difficult due to the diverse resources and habitat that occur in the Gulf. He did not want to begin addressing these issues with the preconceived idea that one solution will work in all situations. C. Perret agreed that this was a hot issue in the Gulf and any effort to address these issues should include all users. R. Nelson suggested that the various Gulf states compile a list of what each state is doing for bycatch and habitat reduction destruction. This information would show that the states are in fact addressing these concerns as well as offering strategy suggestions among the Gulf states.

#### **NMFS/Southeast Regional Office (SERO) Report**

T. McIlwain reported on behalf of the NMFS/SERO. He reported that Bill Hogarth was the new Regional Administrator for the SERO since the past summer. He has brought with him a new spirit of cooperation and constituent involvement in the SERO decision making, which he is passing on to the Washington office. This attitude has been apparent in his recent efforts in bringing together a red snapper stakeholders meeting where all elements of the fishery as well as the conservation community have come together to reach a consensus on how to resolve issues in this fishery. He has also committed himself to developing some kind of flexibility in regards to the certification criteria now in place for BRDs.

He updated the Commissioners on changes at the Southeast Fisheries Center in Miami. Dr. Brad Brown is currently awaiting reassignment.

The Department of Commerce still does not have a budget. A Continuing Resolution is currently on the President's desk that would run through October 29, 1999. NMFS did take a budget assessment which will result in a reduction in the Southeast Fisheries Center starting in the new fiscal year.

He reported that there is currently a 30 day exemption of TEDs in the Matagorda Bay area of Texas. This reduction is due to clogging.

The *R/V Gordon Gunter* is now on line after being transferred from the Navy. The R/V has undergone two overhauls and is the current state of art R/V. At 224', it is the newest and second largest R/V in the NOAA fleet.

The Council's stock assessments for red drum and reef fish are in various stages of completion. They should all be completed next week and will be considered at the next Council meeting the week of November 8<sup>th</sup> in Orlando, Florida.

The shrimp virus issue is still an international concern. An international organization that is part of FAO, and that the U.S. is signatory too, recently held a Fish Subcommittee meeting in New York. This Subcommittee will recommend to the full organization at its next meeting that white spot virus, yellow head virus, and taura virus become reportable diseases. If adopted, this recommendation would set several activities into motion. One of which is that the USDA's Animal Health and Plant Inspection Service will have to develop a set of regulations that would impact the importation of shrimp. Since over two-thirds of shrimp consumed in this country is imported, this will be a major impact. Other nations have already begun developing regulations.

T. McIlwain stated that 16 lawsuits have been filed against NMFS. These lawsuits relate to BRDs, EFH, etc. The lawsuits are currently consuming a great deal of work effort on the part of NMFS employees.

#### **USFWS Region 4 Office Report**

D. Frugé reported on behalf of USFWS Region 4. He reported that the federal government is currently operating under a Continuing Resolution. There are indications that the President will veto the Department of Interior appropriations bill because of several riders that involve Forest Service issues.

The FWS and NMFS are working on a joint project to tag loggerhead sea turtles with satellite transmitters to determine migratory movements at sea. Movement data on some of the turtles can be observed on the Caribbean Conservation Corporation's web site at [www.cccturtle.org](http://www.cccturtle.org).

The Panama City Fisheries Resource Office is involved in projects focused on Gulf sturgeon and other anadromous fish. In the Choctawhatchee River they have initiated a sampling program to estimate Gulf sturgeon population and a telemetry project to determine locations of spawning sites and sturgeon use of coastal habitats. They are also contracting for production of a 15-minute educational video on Gulf sturgeon. Sonic tracking of Gulf sturgeon in Choctawhatchee and Apalachicola bays is being conducted in conjunction with surveys of benthic organisms in the bays.

The Georgia Ecological Services Field Office is working with the Corps of Engineers and the states of Georgia and Florida regarding modifications to facilitate migratory passage of anadromous fish at the Jim Woodruff Lock and Dam on the Apalachicola River.

The Gulf Coast Fisheries Coordination Office is continuing work to finalize a range-wide status review of Alabama shad. The work is being done in cooperation with the Gulf Coast Research Laboratory and is currently focusing on geo-referencing historic collection records.

The anticipated FY 2000 budget for FWS Fisheries program is \$79.8 million, which is a \$6.2 million increase over 1999. Funding for the national fish hatchery system remains level. Nationwide there is currently a \$75 million operational deficit and a \$218 million maintenance backlog. FWS is initiating a long-term vision and strategic plan for the future of the hatchery system. The budget also includes \$115,000 to fund work with the Kemp's Ridley sea turtle at Rancho Nuevo, Mexico. Federal Aid allocations to the states will be up 5-6% in FY 2000, due to delays in input of revenue from prior years. Funding will probably be reduced back to FY 1999 levels in 2001.

C. Nelson mentioned that shortfalls in the federal budget for onshore work with sea turtles is being picked up by the shrimp industry and other organizations supported by industry. He stated that the industry participants feel that protection of the sea turtle nests onshore is as important as the industry's effort offshore through the use of TEDs, etc..

### **OCS Site Clearing and Verification**

Mr. Jimmie Martin, of B & J Martin, Inc. presented a slide show on site clearance and verification. Mr. Martin's company performs site clearance verification and is located in Cut Off, Louisiana and Galliano, Louisiana. He reported that in 1990, the fishing industry and the oil companies were at odds as to how clean the sites were when platforms were removed. Fishermen were still tearing up nets and fishermen did not think the areas were being properly cleaned. The LDWF, in conjunction with the fishermen and oil companies developed a regulation that would require a site to be trawled after a platform had been removed and the site cleared. They agreed that if no nets were torn from platform debris the regulation would be void. The results were torn nets from debris left in areas that were supposedly cleaned. This was the beginning of NTL90-01. This regulation required that the platform be removed, and that the oil companies dive it and survey it by sonar, then pull a trawler to verify that the site has been cleared. He showed various debris that was still left after a site had supposedly been cleared.

Mr. Martin reported that Minerals Management Service (MMS) has a regulation that should enforce installation of Net Guards. His company found that Net Guards were being incorrectly put down and was in many instances creating additional problems. MMS has not addressed this issue. Other problems are exposed pipelines. Site clearance regulations are not sufficient because of many exceptions such as pipelines. MMS's only way of addressing this problem has been to publish Safety Alerts which appears to be inadequate.

He stated that the Rigs to Reef Program started out as a great idea, with specific areas designated for reef areas. Now, instead of moving the rigs, they are being toppled where they stand. Environmentalists refer to this as ocean dumping instead of toppling. All trash that would have been removed during site clearance is now left on the bottom.

In 1998, in the Gulf of Mexico, 437 wells have been drilled that have never been trawled or cleared. Sixty one have been removed and 119 have been installed. In Louisiana, 4 rigs to reefs in 1998 and 2 rigs to reefs in 1999. From 1988 - 1998, there have been 345 more installed than removed.

Upon discussion, the Commissioners asked what should be done. Mr. Martin recommended that each Commissioner write their Congressional delegates and demand that the oil companies clear sites properly and that the cleared sites be verified.

### **FY 2000 NMFS Budget**

L. Simpson reported on NMFS FY 2000 budget. He referred the Commissioners to the briefing book which provided copies of the House and Senate recommendations. He stated that the House version was somewhat lean. In the Senate recommendations the MARFIN program and the SEAMAP program continue to be level funded. Under fishery statistics, he pointed out that recreational fishery harvest monitoring is recommended at \$3.9 million in the Senate and is to be divided equally three ways between the Gulf, Atlantic and Pacific States. In the House it was only \$3.1. Gulf FIN Data Collection was a line item in the Senate version that was \$4 million, bringing in an additional \$1 million for commercial activities. Gulf FIN was only \$3.0 million in the House. In the Senate Council funding was recommended at \$13.3 million and interjurisdictional grants to the states was increased to \$3.1 million. The Conference marks are workable, however, the House marks would cause some major difficulties. He indicated that if there were no problems, this should be signed by the President soon.

### **State Director's Reports**

Texas - M. Ray reported for Texas Parks and Wildlife Department (TPWD). TPWD began an initiative 9 months ago involving shrimp management. TPWD staff has analyzed biological data and conducted a series

of meetings with the various stakeholders to discuss options to improve the fishery. They are currently developing regulation proposals that will be presented in the Spring at public hearings. TPWD is trying to further reduce effort in the bays and near shore areas. They are considering expansion of nursery areas, seasonal closures, and gear modifications. They are using a GIS format to create images of shrimp migration from nursery areas to the Gulf in each bay using standard sampling data.

By-catch studies continue in Texas. The Department completed Spring trawls in Matagorda Bay where 90 paired trawls used the fish eye in three positions (60%, 70%, and 80%). They determined that the 80% position was not effective and started using the sea eagle. Low numbers of shrimp and a bryozoan problem have significantly hampered sampling in the Fall.

The TPWD requested a TED exemption for Matagorda Bay due to an extensive bryozoan problem throughout the Bay. NMFS response was positive. This was the first time TPWD had made such a request and they were pleased with the prompt response.

M. Ray reported that the Finfish Limited Entry Act became law. This Act affects the black drum trotline fishery and the commercial flounder gigging fishery. Approximately 1000 fishermen have been grandfathered into these fisheries. The Department is currently proposing regulations for implementation and it is hoped that this program will compliment the existing shrimp and blue crab programs.

A MOU with NMFS Law Enforcement was signed for TED enforcement in state offshore waters. Sixty-five wardens were trained and subsequently boarded hundreds of shrimp boats coast-wide and issued citation and warnings. Their efforts have reduced the turtle strandings along the Texas Coast.

A new Human Dimensions Specialist was hired, Dr. Brian Bohsach. He will report to Robin Riechers.

Finally, M. Ray reported that the TPWD will be going through a Sunset Review for the next 18 months. This is required by the Texas Legislature and is done every 12 years. He indicated that his department would be submitting requested information, making presentations and receiving lots of public comments on their performance and services. Other agencies in the Gulf may be contacted by the Sunset Review Board for comment.

Florida - R. Nelson reported on activities of the new Florida Fish and Wildlife Conservation Commission (FFWCC). This new agency was created by a vote of the public and went into effect July 1, 1999. The FFWCC has combined the Freshwater Fish and Game Commission with the Marine Fisheries Commission, the bulk of the marine patrol from the Department of Environmental Protection as well as the Marine Research Institute and a number of licensing and other marine programs in Florida that were housed in the Department of Environmental Protection. The management functions are divided into three divisions: marine fisheries, freshwater fisheries and wildlife. There is a division of law enforcement that is currently divided into two bureaus: game and fish officers and marine patrol. The enforcement division will be working within a two year time frame to integrate into one bureau that will deal with all resource enforcement issues, whether on land or fresh or saltwater. R. Nelson stated that he would be attending the Gulf and Atlantic Commission meetings as time permitted. In his absence, Virginia Vail will sit as his proxy.

Recent activities of the FFWCC include a proposal that Florida adopt a red snapper program for the recreational fishery that would establish a 4 fish bag limit, a 16" minimum size, and, an April 15 through October 31 open season. They anticipate that this will achieve the catches mandated under the current TAC.

R. Nelson anticipates that this will go into effect on January 1, 2000. Other actions include adoption of a 24" minimum size limit for king mackerel and they are considering adoption of a 15 fish bag limit for Spanish mackerel, pending approval from NMFS.



R. Nelson explained that closure in the horseshoe crab fishery in the Atlantic States recently created fishing pressure within the State of Florida. Over 200,000 crabs were taken within two months from St. Joe Bay. Horseshoe crabs do not sexually mature until age 7 or 9. The FFWCC has begun working on a management plan to deal with the horseshoe crab fishery.

The FFWCC is reviewing their spotted seatrout regulations. Efforts to develop a stone crab FMP have been ongoing for three years. The plan should be finalized in February 2000, and they anticipate it going in to effect on July 1.

Other activities in the State of Florida have been substantial red tide events. They seem to be somewhat abating at this time. Recent inquiries from aquaculturists regarding introduction of Chinese crabs have been met with negative response and will be added to a list that bans import or possession of certain species. The FFWCC will be embarking on a three year program to stock red drum in the Tampa Bay that should begin in the late Fall or early Winter. Finally, R. Nelson reported on trap losses in the lobster and stone crab fishery largely due to Hurricane Irene.

R. Nelson discussed recent discussions regarding a meeting between the Florida Commissioners and the Texas Commissioners to share information of mutual interest. R. Nelson thought that the Commission would be an appropriate entity to plan such a meeting and that it would be beneficial to invite all of the Gulf States Commissioners to attend. It would be a good forum to look at management issues that are of joint interest to the various Commissions in the Gulf States. After discussion, **R. Nelson motioned to have GSMFC Commission staff sponsor a meeting of the various Gulf Commissions. The staff should invite the various Commissions to attend a meeting in conjunction with the March 2000 Commission meeting if possible. The outcome of this motion would depend upon the various Commissions acceptance of the invitation. The meeting could also be a stand alone meeting if room was not available during the March 2000 meeting. V. Minton seconded. The motion was approved.**

Alabama - V. Minton reported for Alabama Department of Conservation and Natural Resources (ADCNR).

He reported that Alabama has a new Commissioner, Mr. Riley Boykin Smith. Mr. Smith has been involved with the Alabama Wildlife Federation, the National Wildlife Federation, and the Wild Turkey Federation for many years. V. Minton stated that he is an avid fishermen and hunter and he looks forward to continuing to work with Mr. Smith.

The ADCNR has recently received approval from the Corp of Engineers to construct an additional 10 inshore reefs. They have been working with Coastal Conservation Association, Wildlife Federation and shrimp industry to identify these sites. They are trying to utilize historical oyster reefs or current locations of hangs. The materials that will be used in those sites would be exclusively concrete. Five reefs have been built to date (not part of these new sites), that are working extremely well in providing additional habitat and rejuvenating some oyster habitat.

Shell planting as a result of Hurricane Danny is now complete. They utilized both oyster shell and lime stone.

This years white shrimp harvest has been extremely good. It may prove to be a new record. This is good news since the brown shrimp harvest was not particularly good.

The ADCNR is looking to establish an oyster dredging area in central Mobile Bay. This was a result of surveys conducted in the early summer by the Corp of Engineers. This survey showed some significant population of oysters in the central Mobile Bay.

Mississippi - The following report was read into the record for C. Perret on behalf of the Mississippi Department of Marine Resources (MDMR).

George Sekul has recently been appointed a member of the Mississippi Marine Resources Commission.

This past session of the Mississippi Legislature moved the law enforcement into the MDMR.

The State of Mississippi has not encountered any red tide events this year. They continue to monitor their waters.

Mississippi oyster season opened approximately 2 weeks ago. Fifty to sixty vessels participate in this fishery per day with a 30 sack limit per day. The average take is 25 sacks per boat per day.

The MDMR has received approval from NMFS for disaster funds due to the opening of the Bonne Carré. Funds received will be utilized for monitoring of brown shrimp populations; constant recording of hydrological monitoring stations; and, for BRD studies in the Mississippi Sound.

The Department is looking at escape rings in crab traps and at the possibility of a license fee for recreational crabbers. It is at the Crab Task Force level at this time.

Louisiana - J. Roussel reported for the Louisiana Department of Wildlife and Fisheries (LDWF). He reported that the Louisiana Legislature passed a great many legislative instruments affecting marine fisheries. Even though it has been over 2 years since the state had an active dredging industry, the Legislature now prohibits shell-dredging from state-owned water bottoms. LDWF staff continue efforts to develop oyster reef material. They are looking at different cultch material, including limestone, concrete and other mixtures.

Louisiana has had an influx of individuals from Mexico who are working in various fisheries. This created problems when they were working on vessels. To deal with this problem the Legislature created a new commercial license for persons/entities who are not U.S. citizens.

In an effort to resolve problems between the shrimp industry and the crab industry regarding crab traps, the Louisiana Legislature defined serviceable crab trap, and requires that owners properly dispose of unserviceable traps. This also would allow shrimpers to remove unserviceable crab traps.

Problems created by Louisiana's intact landing laws were addressed this session. Legislation was passed that would allow possession of two pounds of finfish parts per person on vessels equipped to cook.

Other actions by the Louisiana Legislature were: establish an Oyster Task Force in statute; create a Shrimp Account in Seafood Promotion Fund to market shrimp; and, they required that the LDWF be able to electronically receive trip ticket data from dealers by January 1, 2001.

Finally the LDWF along with LSU, have been asked to develop a Fisheries Leadership Development Program. This would be a two year program for up to 30 participants, that would be very comprehensive in trying to develop leadership in fisheries. LSU currently has an similar program for agriculture that has been extremely successful.

With funds made available due to the Bonne Carré disaster, the LDWF will be working on four projects that will help their fishermen. They will be attempting to reestablish seagrass beds in Lake Pontchartrain; developing safe harbors for fishermen and vessels during storms; working with Loyola University to establish fisheries commodities at their farmers market; and, additional fishery monitoring in the Lake Pontchartrain Basin.

J. Roussel reported on a Supreme Court Ruling regarding subservient clauses in oyster leases. Currently, the Department has added language to renewed leases that would make the lease subservient to oil and gas

operations that pre-date the oyster lease. The Supreme Court ruled against these clauses. This could result in perpetual leases.

The State of Louisiana has established an Aquaculture Task Force to develop a State Aquaculture Plan.

### **Status of Commission's Cooperative Data Collection Program**

RecFIN and ComFIN - D. Donaldson reported that the Commission's Data Collection Program, FIN consists of two major components: the Commercial Fisheries Information Network (ComFIN) and the Recreational Fisheries Information Network [RecFIN(SE)]. These programs establish a state-federal cooperative program to collect, manage, and disseminate statistical data and information on the marine commercial and recreational fisheries of the Southeast Region.

He reported that RecFIN(SE) has been working on various issues and problems regarding data collection and management of recreational data. In regards to the Cooperative Charter Boat Survey Research Program, NMFS endorses the methods being used to estimate charter boat effort, and has expanded the survey to cover the east coast of Florida. Efforts have begun to bring Texas into this research project. Headboat sampling is continuing in Texas, Louisiana, and Florida.

One of the most significant activities is the implementation of the Marine Recreational Fisheries Statistics Survey (MRFSS) in the Gulf of Mexico. These activities are administered and coordinated by the Commission.

Under the ComFIN aspect of the program, two of the major projects are the development of a trip ticket program and development of the FIN data management system.

D. Donaldson reported that the Commission continues to support the Menhaden Port Sampling Program. It is now funded through a cooperative agreement.

A project to collect shrimp effort, area fished, size frequency, and aging data began in July 1999. The purpose of this activity is to provide for the intercepts of shrimp fishermen and collection of effort data as well as collection of length and weight data, hard parts and tissue samples for various species.

The final activity supported by ComFIN is a effort to upgrade and expand Florida's saltwater license information system. This involves conversion of the database into Oracle format.

RecFIN and ComFIN have been coordinating with other regional programs, including ACCSP, and Pacific RecFIN and PacFIN.

### **OCS Federal Legislation**

L. Simpson updated the Commissioners on current OCS revenue sharing legislation being proposed in the House and Senate. At the request of the LEC and DMS, he wrote letters in support of Senator Kerry's Bill. Subsequently, the Commission was asked to review and/or sign on to a letter from 40 Governors supporting legislation that would reinvest a portion of the revenues from federal OCS development in coastal conservation and impact assistance. L. Simpson polled the states and it was decided to write our own letter of support (in briefing material) with a Gulf States prospective.

C. Nelson asked what action the Commission could take to support the clean-up of debris discussed by J. Martin earlier in his presentation. **He suggested that the C/RAP develop action that would begin effort on the part of the Commission to support debris clean-up left by oil and gas exploration.**

## Report on Joint Habitat Program with Councils

J. Rester updated the Commissioners on current habitat activities. He displayed a brochure entitled *Protecting Fish Habitat*. Twenty-three thousand brochures were printed and will be distributed Gulf-wide.

He reported that he is currently working on compiling a *Fishing Impacts Annotated Bibliography*. This deals with the impact on habitat from fishing. He has compiled about 230 papers to date. He has citations for another 230. This should be done by the first of the year.

The Habitat Subcommittee is working on a habitat poster for distribution in the Gulf. TPWD has been very helpful. Their artist has donated his time, free of charge. Hopefully they will have a full size color mark up at the March 2000 meeting.

The Gulf Council, along with NMFS and NOAA are involved in a lawsuit. The lawsuit contends that the fishing impact section of the EFH Amendment is not sufficient. This should be resolved by the first of the year.

J. Rester attended a meeting in Maryland with the EFH Coordinator for NMFS and Council Habitat Personnel. They discussed what lessons were learned from designating EFH, and what worked and didn't work. While attending this meeting, NMFS personnel were very interested in the *Fishing Impacts Annotated Bibliography* that J. Rester is working on. They also have been trying to compile a similar bibliography. They are assisting with this effort through a \$4,000 award to help with further research, provide travel for this research and help pay for the final printing cost.

The Texas, Louisiana/Mississippi, and Florida/Alabama Habitat Protection Advisory Panels of the Gulf Council met in October. These meetings were to review the Council's habitat policies and procedures and other projects affecting habitat in the Gulf of Mexico. J. Rester subsequently met with NMFS and Council personnel to discuss the Advisory Panels' comments.

Other activities include continued review of public notices for projects that would adversely affect habitat in the Gulf of Mexico.

## Executive Committee Report

G. Sekul reported that the Executive Committee met Thursday, October 21. **On behalf of the Executive Committee, G. Sekul motioned to have the FY98 Audit approved. The audit had previously been approved by mail ballot and this action was necessary for ratification. C. Nelson seconded. The motion to approve the FY98 audit passed.**

G. Sekul reported that the Executive Committee reviewed the proposed FY 2000 budget (Attachment 1). **On behalf of the Committee, G. Sekul moved to approve the proposed budget in the amount of \$4,077,083. W. Penry seconded. The motion passed.**

G. Sekul noted that the budget included salary increases for the staff. **On behalf of the Committee, G. Sekul motioned to provide a 3% increase for headquarter staff. C. Nelson seconded. Motion passed.**

**On behalf of the Committee, G. Sekul motioned to raise the Staff Accountant an additional \$1,000 in salary. C. Nelson seconded. J. Roussel asked why this increase. L. Simpson described the Staff Accountant duties, which included all bookkeeping, audit, building and learning a new accounting program. The motion passed.**

**On behalf of the Committee, G. Sekul motioned to increase the Executive Director's salary an additional 2%. C. Nelson seconded. The motion passed.**

L. Simpson reviewed changes to the administrative manual. These changes relate to cost of insurance for employees not housed in the Commission home office. These changes had already been approved through mail ballot, but required ratification. **G. Sekul moved to approve the changes as presented. C. Nelson seconded. The motion passed.**

#### **Future Meetings**

G. Herring reported that the next meeting will be held March 13-16, 2000 at the Perdido Beach Resort in Orange Beach, Alabama. The October 16-19, 2000 meeting will be held jointly with the Atlantic States Marine Fisheries Commission. A site has not yet been confirmed, but areas being considered are Sanibel Island, Captiva Island, and Tampa, Florida.

G. Herring indicated that due to increase costs, registration fees will be increased.

#### **1999 Interjurisdictional Fisheries Activities**

L. Simpson stated that a written report was provided in the briefing book for information purposes.

#### **Publication List**

L. Simpson stated the Publication List has been updated and is provided for informational purposes. Contact the office if you need copies of any publication.

#### **Election of Officers for Next Year**

L. Simpson described the historical rotation of Chairman and Vice-Chairman. Usually the Vice Chairman would move up to Chairman, but since Ed Conklin is no longer on the Commission, there is a vacancy. Although it is Florida's rotation to serve as Chairman, R. Nelson suggested that the Louisiana and Florida rotation be switched. **J. Roussel motioned to elect Fred Miller, Chairman; R. Nelson, Vice Chairman; and, Vernon Minton, 2<sup>nd</sup> Vice Chairman. V. Minton seconded. The motioned passed.** The Chairman will appoint a representative from Texas to also serve on the Executive Committee.

#### **Presentation to Outgoing Chairman**

On behalf of the new Chairman, Fred Miller, L. Simpson presented a gift to G. Sekul for his service as Chairman for the past year. G. Sekul thanked the Commissioners for the gift and for the opportunity to work with the Commission on important Gulf of Mexico issues. He also thanked the staff for their assistance this past year.

L. Simpson also presented a framed poster commemorating the 50<sup>th</sup> Anniversary of the Commission to each Commissioner.

**The meeting was adjourned at 12:17 pm.**

GULF STATES MARINE FISHERIES COMMISSION  
 FY00 Budget  
 January 1, 2000 - December 31, 2000

Attachment 1

	FY00 Operating Funds	FY00 Total Grants	FY00 Total Budget
<b>EXPENSES</b>			
<b>SALARIES</b>			
Personnel (designated)	82,743	534,220	616,963
Personnel (not designated)	7,480	9,261	16,741
Contract Labor (Port samplers)	0	128,638	128,638
Health Insurance	10,312	107,828	118,140
Retirement	5,792	46,835	52,627
Payroll Taxes	8,115	55,068	63,183
<b>MAINTENANCE/OPERATIONS</b>			
Facilities	17,856	5,400	23,256
Office Supplies	2,200	29,879	32,079
Postage	1,000	16,850	17,850
Professional Services	1,000	10,895	11,895
Travel (Staff)	8,000	41,140	49,140
Telephone	4,000	43,560	47,560
Office Equipment	0	17,100	17,100
Copying Expenses	1,000	17,850	18,850
Printing	1,000	10,500	11,500
Meeting Costs	10,000	14,900	24,900
Subscriptions/Dues	500	400	900
Auto Expenses	2,500	9,475	11,975
Insurance	4,111	13,280	17,391
Maintenance	1,354	72,595	73,949
Petty Cash	300	0	300
Taxes (property)	987	2,525	3,512
Committee Travel	0	186,338	186,338
Contractual	0	2,515,029	2,515,029
Utilities	2,056	5,348	7,404
Janitorial (service/supplies)	2,741	7,122	9,863
<b>TOTAL</b>	<b>\$175,047</b>	<b>\$3,902,036</b>	<b>\$4,077,083</b>
<b>INCOME</b>			
<b>STATE CONTRIBUTIONS</b>			
Alabama	22,500		
Florida	22,500		
Louisiana	22,500		
Mississippi	22,500		
Texas	22,500		
<b>TOTAL DUES</b>			<b>112,500</b>
<b>INTEREST</b>	<b>12,000</b>		<b>12,000</b>
<b>REGISTRATION FEES</b>	<b>4,500</b>		<b>4,500</b>
<b>FUNDS FROM RESERVES</b>	<b>31,407</b>		<b>31,407</b>
<b>RENT</b>	<b>14,640</b>		<b>14,640</b>
<b>GRANTS</b>			
SEAMAP		80,564	
Interjurisdictional Fisheries		250,000	
Sport Fish Restoration		150,000	
Council		30,000	
Habitat		39,000	
FWS		37,683	
RecFIN/ComFIN		3,304,789	
Striped Bass		10,000	
<b>TOTAL GRANTS</b>			<b>3,902,036</b>
<b>TOTAL</b>	<b>\$175,047</b>	<b>\$3,902,036</b>	<b>\$4,077,083</b>



**TCC ARTIFICIAL REEF SUBCOMMITTEE  
MINUTES  
Tuesday, November 10, 1999  
Tampa, Florida**

Chairman Mike Buchanan called the meeting to order at 1:25 pm. The following members and guests were in attendance:

**Members**

- Michael Bailey, NMFS, St. Petersburg, FL
- Mike Buchanan, MDMR, Biloxi, MS
- Jan Culbertson, TPWD, Houston, TX
- Les Dauterive, MMS, New Orleans, LA
- Carlos Diaz, USFWS, Atlanta, GA
- Jon Dodrill, FWCC, Tallahassee, FL
- Steve Heath, ADCNR/MRD, Dauphin Island, AL
- Rick Kasprzak, LDWF, Baton Rouge, LA

**Staff**

- Ron Lukens, Assistant Director, GSMFC, Ocean Springs, MS
- Nancy Marcellus, Administrative Assistant, GSMFC, Ocean Springs, MS

**Others**

- Scott Bartkowski, Artificial Reefs, Inc., Gulf Breeze, FL
- Dennis Bedford, CDFG, Long Beach, CA
- John Kraft, Artificial Reefs, Inc., Gulf Breeze, FL
- Craig Lilyestrom, PRDNER, San Juan, PR
- Tom Maher, FWCC, Tallahassee, FL

**Adoption of Agenda**

The agenda was adopted as presented.

**Approval of Minutes**

Due to time constraints the minutes from the previous meeting were only available in draft form. They will be approved at a later date.

**State-Federal Reports**

Alabama - Steve Heath reported that Alabama deployed a large dry dock recently. It was deployed in the Hugh Swingle general permit area, which is the northern most area south of Dauphin Island. He indicated that the inshore reef program is progressing. There are 10 inshore low profile artificial reefs that will be built over the next couple of years. There are currently 3 reefs of that type in place,

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and they are good for spotted seatrout and red drum. These reefs have about 3 or 4 feet of relief, and are primarily made of concrete. Three were built over historic oyster reefs that died back and then were scattered by shrimp trawls until nothing was left but hard bottom. The concept is that by putting concrete rubble in a ring around the historic sites, marking all pilings, and putting oyster cultch in the center, active oyster communities can be reestablished.

Louisiana - Rick Kasprzak reported the completion of 11 projects during 1999. A survey of several artificial reef sites was also completed. That survey was the third in a series of four planned surveys using side scan sonar to document the sites. During 1999 the South Timbalier area, which was heavily impacted by Hurricane Andrew in 1994, was surveyed. There was no movement of artificial reef material detected. It is anticipated that all sites will be surveyed by the end of 2000.

California - Dennis Bedford reported that the long awaited kelp mitigation reef has been completed. It was put in by Southern California Edison as mitigation for damage done to a natural kelp bed by the power plant. The first part of that is an experimental reef that covers about 22 acres. It will be monitored for the next five years. There are 3 different configurations of material on the bottom and 2 types of material, including concrete and quarry rock. After the 5 year evaluation, one of those will be chosen for full expansion to 150 acres. Kelp should be growing on the substrate by the fall of 2000.

California is still in the talking stages regarding a Rigs-to-Reefs program. A number of deep water rigs are coming up for removal in the near future and plans are being made to deploy some or all of them as artificial reefs. It is the subject of much controversy.

He reported that a new reef, using about 70,000 tons of concrete from a demolition of a naval shipyard, has just been completed off Orange County near Los Angeles. It is currently the largest artificial reef on the west coast.

Puerto Rico - Craig Lilyestrom reported that Puerto Rico has been deploying different kinds of units over the last two years. There are currently about 90 Reef Ball units deployed off the east coast. They intended to continue deploying Reef Balls, but there were difficulties getting the molds. Consequently, they changed to a different kind of unit, which is a square concrete box roughly the same size as the Reef Balls. About 90 were deployed. He indicated that they intend to go back to deploying Reef Balls as soon as the details are worked out. In addition they are considering purchasing a barge and crane to facilitate deployment. Evaluation of the sites is planned.

Minerals Management Service - Les Dauterive reported that the California MMS office has been working on the Rigs-to-Reef issue in California. He indicated that the MMS has developed a bibliography of all the studies that have been done in California and the Gulf of Mexico on platforms as reefs, both while in production and after they become reefs.

He indicated that the MMS is reviewing a paper for the London Convention regarding onshore disposition of offshore oil and gas platforms. The objective of the paper is to discuss the evolution



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of onshore disposal, and to evaluate the protocol as an international standard for offshore platform disposal.

Florida - Jon Dodrill reported that by the end of June 2000, Florida had successfully completed 16 out of 16 federally funded artificial reef construction projects, most occurring in the Gulf of Mexico. Four of the 16 were fish havens, which were deployed by Artificial Reef, Inc.

As a result of a constitutional amendment a year ago the Division of Marine Resources within the Department of Environmental Protection was transferred and merged with the state's Game and Freshwater Fish Commission. The new agency is called the Florida Fish and Wildlife Conservation Commission, and it will address all fish and wildlife issues. The artificial reef program is in a new Division of Marine Fisheries within the new agency.

He reported that they are supporting a continuation of a socio-economic study in five counties to evaluate the impacts of artificial reefs in the northwest Florida panhandle area. The project is currently focusing on an urbanized high population area in southeast Florida, and will address the uses and value of both artificial and natural reefs. In addition, they are planning to conduct monitoring of vessels in southeast Florida which were deployed for diver usage and fishing. The project will compare fish populations on ships versus nearby natural reefs. There is also a pilot study to have environmental education personnel conduct fish identification training for several volunteer dive groups throughout the state so that they can begin assisting the program with basic monitoring.

Dodrill gave the Subcommittee a status report of *Spiegel Grove*. He indicated that he had talked to the Maritime Administration who told him that they terminated all scraping contracts with International Ship Breaking, which is the company in Brownsville, Texas that was supposed to scrap the *Spiegel Grove*. International Ship Breaking is filing suit, and the *Spiegel Grove* is named in the suit. In another suit, one of the ships that International Ship Breaking scrapped contained mud ballast, and International Ship Breaking wants \$1.5 million to dispose of the mud. MARAD says they will not pay for that disposal, thus the law suit.

Texas - J. Culbertson distributed copies of their program's recent reef list. She indicated that 1999 has been unusual, because they tried to conduct more monitoring and to deploy more quality materials. The program did not deploy any inshore reefs during 1999. They primarily focused on oil rig donations, because the trust fund is getting low. The program had 4 rigs donated by Mitchell. Those were partial removals in about 60 feet of water. They were able to cut off at a 10 foot profile with 50 feet of clearance. A permanent buoy will be deployed there.

She indicated that a buoy on one of the reef sites disappeared. Texas A&M University in Corpus Christi received a \$50,000 grant from the program to survey the inshore reefs during 1999. While they were surveying, they found the buoy at 110 feet wrapped around the rig. It is unlikely that the buoy will be retrieved. Currently the program has a total of 37 reefs.

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She added that they are sponsoring an evaluation of partial removals versus toppled platforms versus standing platforms to determine whether it is beneficial to continue with partial removals. She indicated that they would be evaluating the habitat function of each type reef. Culbertson asked if other states had entered into agreements with MMS to conduct such studies. Kasprzak indicated that Louisiana has a contract with LSU to conduct such a project in conjunction with MMS.

In addition, she indicated that they are conducting surveys of Reef Ball deployments as per grant requirements. For two years they have been searching for Reef Balls that were deployed off Galveston. They have located some signatures on their side-scan sonar unit, but will have to conduct dives to find out if it is the Reef Balls in question. Also, they have located some illegal material. The program deployed additional Reef Balls offshore Port Isabelle between two oil and gas structures. They have had a report that all the units are piled up on the base of one of the rigs, and there are shrimp trawls hung on the structure, including a TED. Work continues to prepare the *Clipper*, an educational vessel from Texas A & M, for sinking, probably off Corpus Christi.

Mississippi - Mike Buchanan indicated that Mississippi is placing buoys on all artificial reef areas, deploying more concrete, and working with MMS on developing planning areas for Rigs-to-Reefs. Mississippi's artificial reef plan has been approved and adopted. The only change from the original draft is the following language: "any material to be deployed will be inspected by a representative of the Mississippi Department of Marine Resources or his designated official prior to deployment to ensure that the material is environmentally safe and free of toxic contaminants or pollutants."

#### **Status of GSMFC Sport Fish Restoration Administrative Program**

Lukens provided a followup to an earlier discussion about funding associated with the Sport Fish Restoration Program. Of primary interest to the Subcommittee and the Commission is the administrative fund. There continue to be issues associated with the administration of the program. One has been resolved at least for 2000-2001, which will continue to provide administrative funding to the Commission. Currently the three commissions will receive \$100,000 each from the Sportfish Restoration administrative fund for 2000-2001. In addition they will each receive \$50,000 of reverted funds. These are Wallop-Breaux funds that states did not use in the two year window that the funds are available for expenditure. Because of the reduction in funds from \$200,000 to \$150,000, program activities had to be reduced. However, support for the Artificial Reef Subcommittee will continue as in the past. It is expected that after two years the funding will go back up to our originally agreed upon level of \$200,000.

Next Lukens discussed activities. He reminded the Subcommittee of his earlier concern that the \$50,000 from reverted funds would have to be spent on a research project. Subsequently there were discussions with FWS Headquarters Federal Aid staff who have interpreted the rules and regulations for use of reverted funds such that activities that are in support of research and data can be supported.

He reminded the Subcommittee of the proposal to purchase the computer-assisted side scan sonar equipment to assist in the relocation of artificial reef sites. Since the \$50,000 does not have to be spent on a research project, Lukens recommended not going forward with the purchase of the

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equipment. In addition, he indicated that in order to get the unit that the program would need, \$50,000 would not be enough to allow for training or boat costs. There was no objection from the Subcommittee.

Lukens indicated that there is an item on the joint meeting agenda to readdress the issue of relocation of sites using DGPS, because of the differential between using LORAN and the coordinates that were used to plot them on the chart. In a lot of cases the locations plotted on the charts are different from the actual locations using DGPS. Lukens indicated that he wanted to see if the Atlantic States have an interest in pursuing a resolution to the situation. Additionally, he wants the joint session to discuss how to coordinate with NOS to provide new location information for the charts.

Lukens indicated that he had spoken with Ian Workman, NMFS Pascagoula Laboratory. He has gotten involved in a project to monitor age 0 and 1 red snapper habitat in the northern Gulf of Mexico. He has done some very interesting work, along with Steve Szedlemeyer, University of South Alabama, using artificial reef materials. Ian has agreed to attend the next meeting of the Subcommittee and provide the members with a presentation of his work. This project directly pertains to using artificial reefs as a fisheries management tool. This is one of the first opportunities to evaluate a possible impact of applying artificial reef technology to solving a fisheries issue. Age 0 to 1 red snapper are the two ages that are most susceptible to shrimp trawl mortality. The possibility that habitat may be limited for those ages may be a factor in making them vulnerable to shrimp trawls in mud flat and sandy areas.

Carlos Diaz provided an update on the Federal Aid issue. He indicated that even though \$100,000 comes from the regular administrative grant money and \$50,000 comes from reverted, it will be treated as one grant.

### Non-indigenous Species Issues

Culbertson reported that about three years ago she and her staff were monitoring an oil structure prior to conducting a partial removal. They noticed that the structure was completely white, covered in tunicates. While it looks like any other white tunicate, it is a species that is indigenous to Honolulu, Hawaii and in the Pacific. In 1983 it was identified in the West Indies in the Caribbean. They shipped a sample from Hawaii for comparison, and they have verified that it is the Pacific species. They will also be analyzing the DNA to see if there are any genetic differences. The animal is proliferating much more than normal, and is covering all the reef substrate. It took over a well established, 15 year old reef and has killed most of the animals that were there. With a partial removal, there are two sections, the upright base and the decking, which lies on the bottom. The decking had not been in the water prior to deployment, and after two years both the decking and the upright portion were both completely covered.

The species competes against mollusks and other invertebrates for their calcium. It has a protease inhibitor that may be useful in cancer research. The animal seems to proliferate as the water gets warmer. If the tunicate continues to spread and cover existing epifauna, it could do considerable

damage to the overall ecology of the reefs. She asked the other programs to be on the look out for the tunicate, and if it is seen, to inform her and provide samples.

Lukens indicated that Culbertson will be providing a presentation at the 2000 Symposium of the Gulf of Mexico Program in Mobile, Alabama. He then indicated that the Commission is becoming more involved in nonindigenous species issues. He recommended that when a program is monitoring artificial reefs, the divers could be on the look out for other nonindigenous species. He suggested that it might be a good idea to think about characterizing the sedentary and attaching inhabitants of reef structures as a way of looking for nonindigenous species.

He then indicated that a representative of an oil company suggested that oil company divers may be willing to look for this animal while they are monitoring rigs. Some coordination will have to take place to develop sample kits and identification materials for the divers, but it would be a good way to determine if the tunicate found by Culbertson is spreading.

#### **London Convention - Artificial Reefs versus Ocean Dumping**

Kasprzak brought up a concern expressed by some of the various oil companies about the London Convention's potential impact on artificial reef development. Kasprzak explained that the London Convention addresses ocean dumping and disposal of wastes, including oil and gas platforms. Some countries want to have complete onshore removal of oil and gas platforms. The London Convention differentiates between dumping and placement for a purpose other than dumping. Artificial reefs is one of the things they consider as placement. Several countries want artificial reefs to be governed under the Convention as dumping rather than placement.

In May the Scientific Group, which are the advisors to the main delegation of the Convention, will meet to discuss defining artificial reefs. Kasprzak felt that the Subcommittee should come up with a definition for them, rather than have them come up with something that the programs could not live with. The contact person with MMS is Melanie Stright, who will be a member of the U.S. delegation. Kasprzak sent her a copy of Louisiana's artificial reef plan and a copy of the Coastal Artificial Reef Planning Guide to let her know that there is assistance available that knows the difference between artificial reef development and ocean dumping. Lukens added that the MMS representative needs to be aware of the breath of artificial reef expertise and the fact that the programs have moved beyond a lot of early criticisms and now have standards and guidelines and plans and protocols.

The Subcommittee recommended that Lukens coordinate with Richard Christian, ASMFC, to set up a meeting with Ms. Stright to discuss the implications of this issue at the London Convention Scientific Group meeting. In addition, the issue and recommendation was forwarded to the next day joint session.

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#### Database Updates

Lukens indicated that he continues to have problems with the database, mainly with the Florida portion of it. The major problem with the Florida portion is that there are many duplicate records in the database. In some cases there are two records of the same reef, and in some cases there are as many as four or more records of the same reef site. This is because when sites are re-permitted they are given a new permit number and show up in the data as a separate site. He stressed that there is a lot of work to do before the database can be made available for use. He pointed out that the Corps of Engineers Districts should consider not assigning a new permit number to a re-permit. Lukens advised that he will send the new database format out to the members. He asked that if anyone has any new records, to revise their file and then send him the whole revised file. He also mentioned that he can receive those kinds of files over the Internet if anyone wishes to send them as an attachment.

#### Update on Economic Survey of Oil/Gas Structures

L. Dauterive reported on an MMS funded study entitled "Economic Impacts on Fishing and Diving Associated with Offshore Oil and Gas Structures" which was awarded to QuanTech, Incorporated from Arlington, Virginia. The three year contract was awarded December 1997. The objectives of the study, according to their report, is to estimate the recreational demand for fishing and diving associated with offshore oil and gas structures and artificial reefs constructed from those structures. The analytical objectives are to estimate demand for rig and reef activities by user groups, i.e. private boat anglers, and party/charter boats and divers; estimate incremental expenses associated with this demand; and use valid economic models to combine demand and incremental expenses to calculate the economic impacts in the Gulf states and local jurisdictions and industry sectors servicing recreational fishing and diving. In 1998 QuanTech developed the questionnaire which was approved by the Office of Management and Budget. In 1999 they started gathering the data. An economist at QuanTech will write the report and analyze the data. That report is due September 2000. At the MMS Information Transfer meeting in 2000, QuanTech will give a verbal reporting of their findings. The final report is due December 2000.

#### Other Business

Kasprzak brought up the issue of derelict shrimp boats and inquired if the other states experience problems with derelict vessels. The other states expressed having problems, but agreed that the artificial reef program is not a valid avenue to explore this issue. Dadrill mentioned that Florida has a derelict vessel program for unidentified vessels with funds available to remove such vessels. Mississippi also has legislation that provides for removal of derelict vessels.

Regarding the next Subcommittee meeting, Culbertson made a suggestion to consider having the next meeting in conjunction with the Gulf of Mexico Program's 2000 Symposium. That meeting will be held April 9-12 in Mobile, Alabama. Lukens indicated that he works cooperatively with the Gulf of Mexico Program and is sure they would be willing to consider allowing the Subcommittee to have some meeting space during that period of time in conjunction with their meeting. Lukens

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agreed to work with the arrangement committee and see if the details can be worked out. Otherwise, he will look toward the June or July time frame to meet in Baton Rouge, Louisiana.

Following Subcommittee protocol, current Vice-chairman Jan Culbertson was elected to the position of Subcommittee Chairman. Rick Kasprzak was elected to the position of Vice-chairman.

**There being no further business the meeting adjourned at 5:10 pm.**

APPROVED BY:

*Jan Culbertson*  
COMMITTEE CHAIRMAN

**JOINT ASMFC/GSMFC ARTIFICIAL REEF MEETING  
MINUTES  
Thursday, November 11, 1999  
Tampa, Florida**

Gulf Chairman Mike Buchanan called the meeting to order at 8:30 am. The following members and others were present:

**Attendees**

Henry Ansley, Georgia Department of Natural Resources, Brunswick, GA  
Michael Bailey, National Marine Fisheries Service, St. Petersburg, FL  
Todd Barber, Reef Ball Development Group  
Scott Bartkowski, Artificial Reefs, Inc., Gulf Breeze, AL  
Dennis Bedford, California Department of Fish and Game, Long Beach, CA  
Larry Beggs, Reef Innovations  
Don Brawley, Eternal Reefs, Inc., Avondale Estates, GA  
Mike Buchanan, Mississippi Department of Marine Resources, Biloxi, MS  
Jan Culbertson, Texas Parks and Wildlife Department, Houston, TX  
Randy Cendenton, Artificial Reefs, Inc., Gulf Breeze, FL  
Susan Cherry, Curd Enterprises, Mt. Pleasant, SC  
Les Dauterive, Minerals Management Service, New Orleans, LA  
Carlos A. Diaz, U.S. Fish and Wildlife Service, Atlanta, GA  
Jon Dodrill, Florida Fish and Wildlife Conservation Commission, Tallahassee, FL  
Kat Ethridge, Florida Fish and Wildlife Conservation Commission, Tallahassee, FL  
Bill Figley, New Jersey Fish and Game, Port Republic, NJ  
Ken Forster, NOAA/National Ocean Survey, Silver Spring, MD  
Steve Heath, Alabama Department of Conservation and Natural Resources,  
Dauphin Island, AL  
Bill Horn, Florida Fish and Wildlife Conservation Commission, Tallahassee, FL  
Jay Jorgensen, Reef Ball Development Group  
Rick Kasprzak, Louisiana Department of Wildlife and Fisheries, Baton Rouge, LA  
John Kraft, Artificial Reefs, Inc., Gulf Breeze, FL  
Craig Lilyestrom, Puerto Rico Department of Natural and Environmental Resources,  
San Juan, PR  
Tom Maher, Florida Fish and Wildlife Conservation Commission, Tallahassee, FL  
Vin Malkoski, Massachusetts Division of Marine Fisheries  
Mike Meier, Virginia Marine Resources Commission, Newport News, VA  
Steve Shelton, North Carolina Division of Marine Fisheries, Morehead City, NC  
V. Frank Stone, Department of Navy, Arlington, VA  
Jeff C. Tinsman, Delaware Division of Fish and Wildlife, Little Creek, DE

**Staff**

Richard T. Christian, Atlantic States Marine Fisheries Commission, Washington, DC  
Ronald R. Lukens, Gulf States Marine Fisheries Commission, Ocean Springs, MS  
Nancy K. Marcellus, Gulf States Marine Fisheries Commission, Ocean Springs, MS

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## Adoption of Agenda

R. Kasprzak made a motion to adopt the agenda as presented. The motion was seconded by V. Malkoski and passed unanimously.

## Review and Approval of Minutes

V. Malkoski made a motion to approve the minutes from the October 20-21, 1998 joint meeting held in Jekyll Island, Georgia. The motion was seconded by R. Kasprzak and passed unanimously.

## Report on San Remo Conference

Tom Maher distributed a manila envelope to the state coordinators which contained a guide to the proceedings of the San Remo, Italy conference. The handout had a check box next to the title and abstract of all the presentations. Any coordinator who wants copies of the papers would have to check the appropriate box and Maher agreed to copy that paper and send it to the coordinator. Maher also made a similar check box sheet for the 1996 European Artificial Reef Research Network. It is a reference to research papers from Europe.

Maher reported that there were about 250 people present at the San Remo conference. There was no representation from Australia, New Zealand, or India. Taiwan, not normally thought of as a country active in artificial reef development, has deployed 40,000 modules in the last ten years. The papers are organized in groups, e.g. Rigs-to-Reefs in one section, planning in another section, Japanese activities in another section. There was good representation from Mexico, Brazil, Portugal, and Spain.

Jon Dodrill added a few comments, thanking the National Marine Fisheries Service for making it possible for him to attend the conference and the Gulf States Marine Fisheries Commission for recommending him to represent the Artificial Reef Subcommittee and all of the Gulf states. Dodrill indicated that he originally had a 38 page manuscript which had to be cut down to 17 pages for presentation. Dodrill gave an overview of the Texas, Louisiana, Mississippi, and Alabama reef programs. Maher gave a presentation on Florida's program. There was another paper that dealt with permitting issues. He indicated that there were 90 papers given, representing 22 countries, with 2 separate sessions.

Ron Lukens offered to have the Gulf States Marine Fisheries Commission handle the requests for papers, the copying, and the postage. Dodrill agreed to that approach, and agreed to supply a copy of the proceedings for Lukens to use. Atlantic and Gulf committee members were asked to make their requests for papers from the conference to the Gulf States Marine Fisheries Commission office.

Maher indicated that the 8<sup>th</sup> International Conference on Artificial Reefs and Artificial Habitats is going to held in Gulf Shores, Alabama in 2003.



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Richard Christian reminded the joint committee that there was an attempt to have a joint meeting of these two committees at the international conference in San Remo. Due to budgetary and other constraints the committees were unable to meet. He asked the joint committee if they want to try and get on the 2003 agenda early and work with the conference steering committee to solidify the states role in the next international conference. He expressed concern that those building the reefs in the United States don't typically get proper representation at the international conferences. There continues to be a dichotomy of development and research, and getting involved early might help overcome the dichotomy. He indicated that he had heard comments from U.S. representatives, mostly from the research community, that are negative toward what the states are doing in their artificial reef programs. He suggested that a closer working relationship between the research and management communities is an important need.

Lukens asked if there were any presentations from management programs from other countries. Christian responded that there was one from the Hong Kong program. He stated that they are implementing a new outreach approach where they meet with the fishermen prior to developing reefs. Dodrill added that the Hong Kong project was a detailed predeployment planning project where they met with a lot of the user groups prior to reef construction. He indicated that the California Edison project, another planning project that has been in the mill for years, was also presented. He asked Dennis Bedford to elaborate on that project. Bedford responded that after 17 years of power plant operation, mitigation for the damage done to about 150 acres of kelp beds off southern California is finally beginning. There have been 22 acres of mitigation so far. This is actually the first phase (experimental) of a larger project. There are three different distributions of rock and concrete and 7 replicate clusters being utilized. Monitoring will take place over the next 5 years to determine which of the distributions will best meet certain performance criteria for not only growing kelp but developing entire biotic communities that were damaged. After that, a decision will be made about how to proceed for a minimum of about 150 acres and a maximum of about 300 acres.

Dodrill indicated that a lot of European artificial reef building initiatives got their start in the mid to late 1980s, primarily to protect *posadonia* sea grass beds from illegal trawling. A lot of that earlier work and continuing work is to study fish and invertebrate populations on large multi-ton concrete structures that are placed in or around seagrass beds placed primarily as anti trawling devices.

Lukens asked Dodrill if he felt that there is a dichotomy of research and management in other countries. Dodrill and Maher both responded yes.

Maher followed up on Christian's comments saying that he felt it became readily apparent that the artificial reef programs in the United States are still viewed internationally as a dumping program, and the other countries are looking more at specific objectives for their reefs. They are putting reefs in for specific purposes, either for research, trawling prevention, or some other activity. Other countries don't see that there is any cohesive structure to artificial reef work in the U.S. He further added that other countries, and even agencies/organizations in the U.S, don't know about the

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coordination activities occurring between the two artificial reef committees, and expressed concern about that.

Christian followed up on Lukens' comments regarding the disconnect between research and management, saying that several people indicated that the program management side needs its own conference venue. There ensued a discussion regarding perspectives in the "disconnect." Maher indicated that many of the European countries are still dealing with regulatory issues and process.

Dodrill pointed out that Bill Seaman gave a talk in which he reviewed a number of different artificial reef papers from the literature in recent years. He noted that research is being done on reefs that were built with objectives other than the specific research objectives. He stressed that artificial reefs should be built with specific objectives and a research project or monitoring activity should be conducted to determine if those stated objectives are being met. He implied that there are a lot of construction activities occurring in the U.S., but very little directed research or monitoring is taking place.

Dodrill pointed out that there were a couple of papers from Alabama researchers that dealt with site fidelity of red snapper and gray trigger fish. He stated that he thought that both species maintained high site fidelity, at least for a period of weeks or months. They pointed out that major storm events played a significant role in dispersing both trigger fish and red snapper off the reef where they were originally tagged. Maher added that Jim Cowen and Bob Shipp, researchers from Alabama and local arrangements coordinators for the 2003 conference, are going to be looking for some assistance from the joint committee to organize the 8<sup>th</sup> conference.

Christian concluded the agenda topic by thanking the NMFS Office of Intergovernmental and Recreational Fisheries for making it possible to have representatives from the three interstate Commissions there.

### **London Convention: Artificial Reefs versus Ocean Dumping**

Rick Kasprzak opened a discussion regarding the London Convention, which deals with ocean dumping. One of the things being considered by the London Convention is what to do with North Sea oil and gas platforms and some of the platforms in the Gulf of Mexico. The U.S. has distinguished between ocean dumping and artificial reef development in that ocean disposal of offshore platforms is aimed at providing habitat. In the North Sea it is not clear if habitat is being provided or if platforms are just being dumped. The issue was sparked by the Brent Spar controversy in 1991, when Shell Oil tried to dispose of an oil storage tank in 6,000 feet of water. Greenpeace International became aware of the attempt and blocked it. The London Convention is having a meeting of their Scientific Group in May to try to define what is artificial reef development and what is ocean dumping. One of their chief concerns is that ocean disposal events may occur under the guise of artificial reef development.

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Kasprzak indicated that Melanie Stright, of the Minerals Management Service and one of the U.S. delegates to the Scientific Group meeting scheduled for May in Australia, had contacted him asking for information, primarily related to Rigs-to-Reefs. Lukens indicated that the Gulf Subcommittee had discussed the issue the day before the joint meeting. He stated that there is lead time to discuss and work on the issue, but that if the joint committee wanted to take some action, they would need to do so at the current meeting, since they would be dealing on an international scale. He informed the joint committee that the recommendation from the Gulf Subcommittee was for Christian, Lukens, and Les Dauterive (MMS New Orleans) to meet with Melanie Stright to determine what can be done. Stright indicated that she is not in any way knowledgeable about artificial reefs, and knows very little about U.S. programs. Lukens expressed concern that there is a group that represents quite a number of nations that will be debating a definition of artificial reefs versus ocean dumping, affecting international policy, in complete absence of people who deal with artificial reefs. It would be problematic to have a policy set by the London Convention that is in direct conflict with state artificial reef programs. Lukens then suggested that the joint committee consider a recommendation as to how to proceed to address the issue.

Dauterive indicated that the London Convention deals with issues much broader than just artificial reefs. He did not know of the initiative introduced by Kasprzak, but indicated that he would be glad to work with committee members to address the issue. Lukens recalled the research conducted by Dave Stanley and others that concluded that below about 300 feet was basically devoid of fish or invertebrate resources that are benefitting from structural material. The Brent Spar, for instance, was proposed to be dropped in 6,000 feet of water. It is clear that that is not a fisheries habitat issue.

Kasprzak made a motion to contact Melanie Stright of MMS to provide input on artificial reefs to the committee so they can present it to the London Convention Scientific Group. The motion was seconded by Culbertson, and passed unanimously.

Lukens indicated that he would be in Washington, DC soon and he and Christian will try to get a meeting set up with Stright. He agreed that they should coordinate with Dauterive.

### **Navy Ships Issue**

Dodrill reported on the status of the *Spiegel Grove*, stating that the Maritime Administration (MARAD) has refused to sign the certificate of transfer which the Fish and Wildlife Conservation Commission did sign and sent back to MARAD in preparation for donation of the ship to the state of Florida. The reason MARAD did not sign is that International Shipbreaking Ltd., the shipyard in Brownsville, Texas where the *Spiegel Grove* is supposed to be prepared for sinking, has not complied with requirements of MARAD's conditions. One of those conditions was the hazardous materials clean-up plan had to be presented and approved by EPA Region 4. International Shipbreaking has not submitted such a plan. International Shipbreaking apparently is also in the middle of litigation with MARAD. MARAD has terminated their shipbreaking contracts on several other vessels which have either not been picked up at all or no action has been taken to scrap them. Dodrill reported that there is also an issue of drilling mud that was used as ballast in one of the

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container ships that was received by International Shipbreaking. Now International Shipbreaking says they want a million and a half dollars for MARAD to dispose of this ballast material, and MARAD said no. MARAD seems to be at a high frustration level, with a backlog of 113 ships, because they are not getting much money from the scrapping. The last two ships they have sold for \$10 a piece. Prior to that they were getting 29 cents per light weight ton. Dodrill stated that the Navy apparently has 4 frigates, two east coast and two west coast, that they are offering at \$1,000 a ton to scrap. International Shipbreaking may be scrapping one of these ships, so they are in no hurry to tackle the Spiegel Grove at this point. Dodrill indicated that it is a wait-and-see situation.

Maher asked if Florida might look for another salvage company. Dodrill indicated that he would have to check with the individual who is coordinating the acquisition. There is no state or federal money involved in the project, but it is scheduled to be sunk in a National Marine Sanctuary to try to determine if deployment of the vessel will take diving pressure off natural reefs. So, there may be yet a third shipbreaking company, as the *Spiegel Grove* was originally to be cleaned by a Baltimore shipyard. That yard was heavily fined by EPA, who stated that under no conditions would the *Spiegel Grove* be cleaned by the Baltimore company. Other shipbreaking companies contacted on the east coast were charging fees that were outside the capability of the diving organization to handle financially. That being the case, Dodrill thinks they are going to stay with International Shipbreaking for the present time.

Culbertson was asked about problems with a vessel that was scrapped and sunk in Texas. She stated there were questions from EPA regarding the wiring. All the wiring was removed from the ship. It was inspected by the TNRCC and the U.S. Coast Guard (USCG). She stated that Texas Parks and Wildlife Department did everything they could to make sure the ship was clean of PCBs, in addition to the Navy's reports. The TNRCC reports on inspections of the ship went to the EPA, who expressed concern. This issue was state jurisdiction, since the TNRCC was authorized by the Corps of Engineers to follow Clean Water Act guidelines for water quality certification in state waters. Texas has a nine mile jurisdiction for state waters with very deep water off of Port Aransas; consequently, they felt they had an adequate site to meet the clearance requirement for the USCG navigation requirements. Finally, it was determined that Texas followed proper procedures, and the concern was dropped. The TNRCC indicated that they would not again become involved in such an effort.

Lukens indicated that he felt that if the group wants to confront the EPA regarding water quality standards, or standards for cleaning ships, the issues ought to be re-evaluated. He passed out a resolution that expresses the Gulf States Marine Fisheries Commission's support for using Navy ships as artificial reefs. It was passed in 1996, and was specific to REEF-EX; although it can be REEF-EX or just ships. Maher indicated that the situation in Texas and California is caused by the fact that EPA is a federal agency with national scope, but each of the regions operate independently. In California, the EPA has basically backed away from this PCB issue and delegated their authority down to the California Regional Water Quality Board for the inspection process. With that in mind, going to EPA may not be effective. Lukens pointed out that they deferred to the Water Quality Board for that ship. This issue should not be addressed on a ship by ship basis. Rather, it should be

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addressed by setting national standards so that people know in advance what they will be facing when taking possession of a ship.

Christian indicated that the Atlantic Committee is prepared to move ahead with approaching the EPA and that they want to develop a resolution similar to the Gulf resolution. The London Convention issue of using ships was discussed along with the international perception of U.S. programs. The development and establishment of standards would elevate the fact internationally that the U.S. is trying to be responsible about the materials that are placed as artificial reefs. Likewise, the lack of reasonable standards does just the opposite, sending a signal that the U.S. doesn't care about environmental responsibility. Christian made the suggestion that the development of standards for cleaning ships for use as artificial reefs should be a joint workshop topic. There was general agreement. An additional suggestion was made that the states, through the Commissions, should work together to develop a plan to establish a series of marine reserves along the Atlantic coast using ships. Barber, representing several non-profit organizations, indicated that they would support the use of ships as artificial reefs in marine reserves.

**[Todd Barber went on record, as representing Reef Ball Foundation and a number of other organizations he represents, that he opposes the use of ships as artificial reefs, not only because of the toxins, but because of fish attraction issues.]**

### Relocation of Sites Using DGPS

Lukens introduced the issue saying that a lot of artificial reefs have been sited using LORAN C and then the coordinates converted to latitude/longitude. Those converted coordinates are then provided to the COE to include in the permit. The converted coordinates end up being used by NOS to create the navigation charts. With the advent of DGPS and more accurate location technology, it is becoming clear that the location on the charts is correct regarding the data provided to NOS, but the materials are not at the location charted because converted coordinates were used to create the charts. The Gulf Subcommittee discussed the need to get new coordinates for sites and provide NOS with the updated coordinates using the current technology. The Subcommittee talked about the Gulf Commission purchasing computer assisted side-scan sonar equipment, house it in a central location, and provide it to the state programs to use on a scheduled basis. However, funding to purchase the equipment did not materialize, and Lukens suggested that another approach needed to be developed. Lukens indicated that he wanted to find out if the problem exists in Atlantic programs, and if there is any interest in pursuing resolution.

Several states indicated that they had already purchased their own side-scan sonar units and would be able to deal with the issue independently. In addition, Lukens pointed out that Louisiana contracts with a professional survey consultant who has been using DGPS for several years. However, he pointed out that there are other programs that will need assistance and he wants to determine the scope of the problem.

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Maier pointed out that navigational charts are used world wide, particularly by the military, and he feels that all state programs have a responsibility to ensure that the charting agency receives coordinates that are as accurate as possible. Maier continued saying that the issue becomes how to get the updated information in a cost-effective manner. He suggested that the easiest way is to take a boat out that has a LORAN C unit on it, relocate the reef with a fathometer, take a DGPS reading on the material, and provide the updated coordinates to NOS for charting.

Lukens pointed out that that covers only half of the problem. He stated that even after receiving updated, more accurate coordinates, and after recharting the materials, NOS cannot delete the old site unless it has been certified clear of any materials. It is possible that NOS would accept state data for determining if a site is clear, as long as the state can follow the criteria established by NOS.

Ken Forster, NOS, indicated that they occasionally hire contractors to do certain surveys, but they follow NOS hydrographic survey procedures and protocols. In other cases, NOS uses the NOAA Corps vessels to do such surveys.

Lukens concluded that he believes that this is one of the most important issues that face the artificial reef programs, because of the navigational conflicts that have arisen in the last several years.

Christian indicated that the Atlantic programs are interested in addressing the issue, but they are concerned about funding to support the field work. He stated that they felt that a joint project would likely have more success than individual states trying to find grant money. There was then general agreement that the group should work together to find a way to resolve the problem.

### **National Artificial Reef Plan Revision Update**

Michael Bailey, NMFS, reported that the NMFS internal review took longer than anticipated because people asked to re-review what they had already reviewed in some cases. He stated, however, that the review is basically finished, and they expect to send out the final product to other federal agencies within a matter of weeks. If that is accomplished potentially they could publish the findings of the other agencies in the early spring, and it would go out in the *Federal Register* for public review at that time.

Lukens asked why he thought it would take that long after release to the federal agencies.

Bailey responded that many would be out over the Christmas and New Years holidays and would not be able to respond until after the new year.

Lukens asked Bailey to describe his best guess at timing for completion of the entire process.

Bailey responded saying that they would like to wrap up the federal agency review and revisions realistically by sometime in February. Following incorporation of agency comments, the document will have to be prepared for the *Federal Register*. That public comment period would be 30 to 90

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days. After that, pertinent comments would have to be addressed and the document finalized. He concluded by saying that it would probably be near the end of 2001 before the document would be finalized and considered for adoption.

Lukens pointed out that the original plan was a technical memorandum. He indicated that the Commissions and their member states want the revised Plan to be national policy, even if it takes a little longer to get it approved. Bailey indicated that he would pass that suggestion along.

Lukens asked if the Committees would have the ability to look at the revisions resulting from the federal agency review process before it goes out for public review. Bailey indicated that he did not know, but would will find out.

### **Joint Publication**

Lukens reminded the group that the ASMFC and GSMFC had agreed to share publishing a document containing research projects conducted by the state programs that have not been published in a refereed journal. The GSMFC agreed to publish the first one about 3 years prior; however, only four articles have been sent in. The articles Lukens received include one from Bill Figley, one from Dewitt Myatt, one from Buck Buchanan, and one from Mel Bell. He indicated that he did not want to go through the effort of standardizing all the formats and fonts for only four articles. He asked the group if they still wanted to go forward with the publication. He also reminded the group that a set of standards for how to put the publication together was developed and distributed.

Lukens was asked what kind of papers were expected. He indicated that submissions should be a project that has a stated objective and draws conclusions, in a classic research project style. Routine monitoring is not appropriate. The name of the publication is supposed to be "Reef Monitoring Studies of the Gulf and Atlantic States". The objective is to publish scientifically collected and analyzed information on stability, durability, compatibility, functionality of reef structures, the ecology and biology of reef communities, the socio-economics, and harvest of reef resources and other topics related to the construction and management of marine artificial reefs for use by reef managers and scientists in assessing the function and value of artificial reefs in better managing of reef resources. It can be conducted by the state or contracted by the state or a paper that the state agency knows about that is not likely to be published anywhere else and would meet these criteria. Lukens pointed out that the original threshold was five articles, and he only needs one more.

After some discussion, it was decided that each member would try to find a paper to include in the document, and Lukens said he would continue the commitment to publish as soon as he has five articles.

### **Marine Reserves/Artificial Reefs**

Christian introduced the item, saying that there is currently a lot of interest in marine reserves. The states of North Carolina, South Carolina, Georgia, Florida, and Christian met with Roger Pugliese

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from the South Atlantic Fishery Management Council to discuss a proposal by the Council. The South Atlantic has been in the process of developing an informational document, a public information document to proceed with creating artificial reefs to enhance the biodiversity of the snapper grouper complex and have them designated as marine refugia. They will be scheduling a public hearing fairly soon.

One of the main issues is enforceability. They are examining shallow waters, mid-shelf, and deeper waters. There is a possibility of a multi-state project with Georgia and South Carolina. Christian indicated that he will keep the Committees informed as the proposal moves forward.

### **Joint Workshops**

Christian made a suggestion that the joint committee should look into the possibility of holding 2 to 3 day workshops on identified issues. He suggested that the first workshop could address PCBs associated with ships, including the EPA's role. He stated that he will work with Lukens to determine if workshops can be budgeted for future years.

### **Possible Revision of "Materials Guidelines" Document**

Christian pointed out that the National Plan draft revision refers to the "Materials Guidelines" document as guidelines for considering which secondary use materials are appropriate for artificial reef construction. In that regard, the joint group should be diligent about keeping that document updated and relevant. He suggested that the group should consider beginning a revision to the guidelines document, and posed the question as to how that could be accomplished.

Lukens indicated that the document was printed in 1997, and it would be reasonable to consider revising it. He indicated that he would rather see a full revision of the document rather than publishing an addendum.

Christian stated that the Atlantic Committee would like for the revision to be a joint publication of both groups. In addition, he suggested that a workshop format may be the best way to approach the revision.

Lukens suggested that the best way to proceed would be to assign review assignments. Individuals would accept responsibility for a section, review it, and determine if additional information is now available. Also, any new materials to be included would be assigned. He suggested that the group may want to consider including specific recommendations in the document for or against the use of certain materials. There was some agreement on that issue. Christian suggested that such an approach may be a lot more important now that the National Plan, when adopted, will refer to the guidelines document for advice. Kasprzak agreed with Christian that a workshop format would be a good approach. A suggestion was also made to consider putting the document in a loose-leaf format to facilitate regular updates. There was general agreement that that would be a good idea.



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Several individuals agreed to review sections and work with Christian and Lukens to move forward.

**Other Business**

Bailey informed the group that the NMFS Office of Intergovernmental and Recreational Fisheries and Sea Grant, among others, are sponsoring a symposium entitled "Managing Marine Recreational Fisheries in the 21<sup>st</sup> Century" to be held June 25-28, 2000 in San Diego, California. He encouraged the group to attend.

Don Brawley, with Eternal Reefs, Inc. informed the group about brochures that he brought for distribution. He summarized his company, indicating that he operates under an agreement with Reef Ball. The basic idea is that individuals who want to memorialize a deceased loved one can combine the ashes of the deceased in the construction of Reef Balls, and have them deployed as a memorial reef. He indicated that the activity was approved by the EPA. He concluded saying that he would be glad to provide detailed information to anyone who is interested.

**There being no further business the meeting adjourned at 2:30 pm.**

**Fall State Directors Meeting**

Casino Magic, Biloxi, MS

December 6-7, 1999

Participants:

Mike Ray, TPWD  
John Roussel, LDWF  
Corky Perret, MDMR  
Steve Heath, ADCNR, AMRD  
Larry Simpson, GSMFC  
Ron Lukens, GSMFC  
Steve VanderKooy, GSMFC

Items for Discussion

1. NMFS TED Exemption
2. Y2K Budget Areas
  - Federal
  - RecFIN/ComFIN
  - SEAMAP
3. State Efforts Addressing Bycatch
4. Limited Entry in the For-hire Industry
5. March Meeting of the State Commissions
6. GMFMC Seat on State-Federal Fisheries Management Committee
7. Non-Indigenous Issues
8. Responses on Alabama HACCPs
9. Next Directors Meeting

Law Enforcement Strategic Plan Meeting  
Work Session Summary  
December 16-17, 1999  
Tallahassee, FL  
FWC Office/Doubletree Hotel

Attendees:

J. Waller ADCNR/MRD, Dauphin Island, AL  
J.T. Jenkins ADCNR/MRD, Dauphin Island, AL  
B. Buckson FWC/LED, Tallahassee, FL  
V. LePoma MDMR/LED, Biloxi, MS (*proxy for T. Bakker*)  
J. Mayne LDWF, Baton Rouge, LA  
D. Johnston TPWD, Austin, TX  
K. Raine NOAA General Counsel, St. Petersburg, FL  
D. McKinney NMFS, Austin, TX  
D. Fiedler USCG 8<sup>th</sup> District, New Orleans, LA  
C. Yocom GSMFC, Ocean Springs, MS

This work session resulted in the first draft of the committee's strategic plan for law enforcement in the Gulf of Mexico. The plan will cover the five-year period from 2000-2005. A vision statement, mission statement, and five goals were drafted. Numerous objectives were noted for each goal and methods to obtain those goals were begun. Each member was assigned a goal to further refine and develop the methods to obtain those goals. These portions will be sent to C. Yocom (GSMFC staff) to compile into the document for the next review by the committee. The committee plans to present the document to the Commission at the March 2000 meeting. The document will also be presented to the Gulf Council. The committee agreed that the draft document should not be distributed outside the committee until completed.

The group also discussed the Coastal Stewardship Act and a similar piece of legislation, the Kara Bill. Both pieces of legislation will continued to be tracked.

Several members made positive remarks on the new law enforcement portion of the GSMFC web page. Several states have used the links to discern license fees for other gulf states. The LDWF has submitted weekly news releases for inclusion, and NOAA General Counsel and NMFS Law Enforcement will begin submitting periodic reports for inclusion.

Other mutual law enforcement topics were discussed among and between the states and federal agencies including training and intelligence sharing.

A conference call may be necessary to further discuss the strategic plan. J. Waller will contact L. Simpson to inquire if the GSMFC can facilitate the call.

Chief Walker, head of FWC law enforcement division, stopped by to welcome the group. Both he and Bruce Buckson were thanked for hosting the meeting at their offices.