


COMMITTEE CHAIRMAN

**COMMERCIAL FISHERIES INFORMATION NETWORK (ComFIN)
MINUTES
Monday, February 23, 1998
Orlando, Florida**

Vice Chairman, Daniel Matos, called the meeting to order at 9:00 a.m. The following members, staff, and others were present:

Members

Steven Atran, GMFMC, Tampa, FL
Page Campbell, TPWD, Rockport, TX
Lisa Kline, ASMFC, Washington, DC
Wilson Laney, USFWS, Raleigh, NC
Skip Lazauski, AMRD, Gulf Shores, AL
Ron Lukens, GSMFC, Ocean Springs, MS
Dee Lupton, NCDMF, Morehead City, NC
Daniel Matos, PRDNER, Mayaguez, PR
Joe O'Hop, FDEP, St. Petersburg, FL
John Poffenberger, NMFS, Miami, FL
Tom Schmidt, NPS, Homestead, FL
Joe Shepard, LDWF, Baton Rouge, LA
Tom Van Devender, MDMR, Biloxi, MS

Others

Steve Brown, FDEP, St. Petersburg, FL
Tom Sminkey, FDEP, St. Petersburg, FL

Staff

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

Approval of Agenda

The agenda was approved as revised with additional items under Other Business.

Approval of Minutes

The minutes of the meeting held on September 23, 1997 in San Antonio, Texas were approved as written.

Review of List of Personnel with Access to Confidential Data

J. Poffenberger distributed a list of personnel with access to confidential data and requested that members make corrections, deletions, and additions. Poffenberger reported that C. Lavarini is now in charge of the data management division of National Marine Fisheries Service (NMFS), Miami and K. Zinniger is responsible for maintaining the list of personnel. D. Donaldson will contact committee members not present and provide them with the list of personnel with access to confidential data for their agencies.

Discussion of Periodic Meetings of Port Samplers

D. Donaldson reported to the committee on the subject of periodic meetings of the state and federal port samplers. J. Shepard and J. O'Hop described how their agencies have handled meetings of personnel involved in the pilot charter boat survey and the trip interview program (TIP). Various data collection methods and goals were reviewed by the committee to determine which needed to be presented to the port samplers and in what format. The possibility of combining meetings of recreational and commercial samplers was also discussed, since some agencies have the same personnel collect data for both. P. Campbell noted that commercial federal port agents in Texas should be included in port sampler meetings. J. Poffenberger noted the need to update the TIP procedures manual for port samplers. He will send the manual to D. Donaldson who will distribute it to committee members for their comment. Fish identification, safety during sampling at sea, sanitation, and other issues were discussed. R. Lukens noted the importance of a standard presentation of procedures in order to begin dialog in a port samplers meeting.

It was determined by the committee that there are two areas of consideration, the updating of a procedures manual, and port samplers meetings. The committee agreed to have D. Donaldson contact L. Bishop of NMFS, Galveston regarding meetings of port samplers. **J. Shepard moved to have a series of regional workshops for federal and state port agents in 1998. The workshop will review the TIP data collection procedures. The motion was seconded and passed unanimously.** R. Lukens noted that there should be an administrative record of any proceedings and recommendations made as a result of the port agents workshop. Any recommendations resulting from a port agents workshop will be reviewed by the Committee before being incorporated into a procedures manual.

from a port agents workshop will be reviewed by the Committee before being incorporated into a procedures manual.

Development of a Data Collection Document of Commercial Fisheries in the Southeast

R. Lukens distributed the handout, "Process for Developing Annual Data Collection Plans". The Committee had agreed to produce a data collection document annually to provide the samplers with the species, type, and number of samples to be collected each year in order to conduct stock assessments. Lukens noted that he had contacted members of the Gulf States Marine Fisheries Commission (GSMFC) Stock Assessment Team for their input.

Lukens explained the process being developed. A list of species had been discussed by this Committee at a previous meeting. All data will be compiled for these listed species. An evaluation and analysis will be conducted of those data to determine if the data that are available provide us with enough information to conduct a stock assessment. Recommendations will be developed regarding species specific data deficiencies. Those recommendations will be put into the format of a data collection plan in conjunction with the data that have already been collected. Provisions can be made for emergency data needs. Lukens noted that the Committee can solicit proposals from individuals with this expertise to conduct an analysis of the current data and provide recommendations. Funding should be available within the next few years for this procedure. Committee members discussed the importance of connecting the needs of stock assessment scientists to the development of a data collection plan, as well as utilizing historical data and future needs. Cooperation between the states, commissions, and councils in prioritizing species was also discussed.

R. Lukens stated that as a demonstration, an outside individual or organization could be contracted to conduct a project which would collect all data currently residing in databases as though a stock assessment were being conducted. This project would then determine which data are lacking in order to conduct a stock assessment in the future. The results of this demonstration project would then be reviewed by this Committee to determine if it is a useful, cost-effective product. This product could be funded in part with Wallop-Breaux funds, possibly beginning in January 1999.

Lengthy discussion ensued and **R. Lukens moved that the Gulf States Marine Fisheries Commission develop a request for proposal (RFP) during 1999 to initiate a study to determine data needs for conducting stock assessments. The motion was seconded and passed with S.Atran opposed.**

Discussion of the Compatibility Between ComFIN and ACCSP Trip Ticket Programs

D. Donaldson reported that the Gulf of Mexico Geographic Subcommittee has addressed the issue of compatibility between ComFIN and ACCSP. It appears that there are some minor differences, however it is understood that not every state will be able to collect the same data initially. There are some differences in terminology, but essentially both programs and survey methods are compatible. Both RecFIN/ComFIN and ACCSP share the goal of coordinating activities to insure compatibility and comparability.

Final Approval of 1998 Operations Plan

Committee members reviewed the 1998 Operations Plan and minor changes and additions were addressed. Staff will make corrections and mail revised Operations Plan to Committee members. **W. Laney moved to accept the 1998 Operations Plan as amended. The motion was seconded and passed unanimously.**

J. Poffenberger will name a replacement for M. Camp to the Data Management and Future Needs Work Groups.

Other Business

R. Lukens stated that at a recent Gulf of Mexico Fishery Management Council (GMFMC) meeting there was some concern expressed that procedures regarding statistical validity of sampling may need to be examined. Lukens asked Committee members if there were any statistical sampling activities in commercial data collection currently taking place. Lukens also noted that at another GMFMC meeting, it was proposed that a joint GSMFC and GMFMC data workshop be held.

Lukens reported that the GMFMC also was concerned about training for at-sea observers and dockside samplers. Many commercial samplers have been involved in this work for years, are very

proficient, and turnovers are very low however, Committee members agreed that future plans should include development of educational and training material. D. Donaldson noted that a training program and guidelines would be developed as part of the Quality Assurance/Quality Control document.

Committee members agreed that the RecFIN/ComFIN should attempt to make presentations to the GMFMC and keep them informed. L. Kline stated that the ACCSP makes presentations to the three Atlantic Fisheries Management Councils. Kline will check with Greg Waugh concerning routine presentations to these Councils.

R. Lukens reported that at the GMFMC meeting, while discussing the validity of commercial data, the question of red snapper otoliths and lengths was raised. S. Atran explained that there has been a large discrepancy in ageing Atlantic and Gulf of Mexico red snapper. D. Donaldson noted that the GSMFC is currently developing an otolith handbook.

J. Poffenberger stated that the NMFS Miami Laboratory must have a plan in place by December 31, 1998 to deal with computer systems and the year 2000. Poffenberger requested that all states that provide data to the NMFS notify him as to whether they will be using a two or four digit year field. Poffenberger also noted that in accessing data on the SEFHost with a PC, Windows 95 is now required.

D. Donaldson asked Committee members to review Committee roster and notify him of any changes.

There being no further business, the meeting adjourned at 4:00 p.m.

**FISHERIES INFORMATION NETWORK
MINUTES****Tuesday, February 24, 1998****Orlando, Florida**

Vice Chairman Joe Shepard called the meeting to order at 8:30 a.m. The following members, staff, and others were present:

Members

Steven Atran, GMFMC, Tampa, FL
Page Campbell, TPWD, Rockport, TX
Bob Dixon, NMFS, Beaufort, NC
Lee Green, TPWD, Rockport, TX
Stephen Holiman, NMFS, St. Petersburg, FL
Lisa Kline, ASMFC, Washington, DC
Wilson Laney, USFWS, Raleigh, NC
Skip Lazauski, AMRD, Gulf Shores, AL
Craig Lilyestrom, PRDNER, San Juan, PR
Ron Lukens, GSMFC, Ocean Springs, MS
Dee Lupton, NCDMF, Morehead City, NC
Daniel Matos, PRDNER, Mayaguez, PR
Doug Mumford, NCDMF, Washington, NC
Nick Nicholson, GDNR, Brunswick, GA
Joe O'Hop, FDEP, St. Petersburg, FL
Maury Osborn, NMFS, Silver Spring, MD
John Poffenberger, NMFS, Miami, FL
Tom Schmidt, USNPS, Homestead, FL
Joe Shepard, LDWF, Baton Rouge, LA
Tom Van Devender, MDMR, Biloxi, MS

Others

Tom Sminkey, FDEP, St. Petersburg, FL

Staff

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

Adoption of Agenda

The agenda was approved as written.

Approval of Minutes

The minutes from the Fisheries Information Network (FIN) meeting held on September 24, 1997 in San Antonio, Texas were approved as written.

Discussion and Review of 1997 FIN Annual Report

The 1997 FIN Annual Report was sent to Committee members prior to the meeting for their review. D. Donaldson stated that until two years ago there had been ComFIN and RecFIN(SE) Annual Reports, but beginning last year they were merged into one FIN Annual Report. Donaldson asked Committee members to submit any editorial comments. M. Osborn suggested merging the RecFIN(SE) and ComFIN Operations Plans into a unified plan with details for both Committees, including work groups, with recreational and commercial components. Donaldson noted some overlapping situations in RecFIN(SE) and ComFIN, such as the Social/Economic Work Group, and the Data Collection Work Group discussion of the discards issue which is common to both commercial and recreational fisheries. R. Lukens noted that Committee members are encouraged to suggest agenda items. **M. Osborn moved to approve the 1997 FIN Annual Report. The motion was seconded and passed unanimously.**

Discussion of Publication and Distribution of FIN Brochure

Committee members reviewed the draft FIN brochure and discussed changes, distribution and budget. Committee members suggested that the brochures should be sent to the Gulf of Mexico Fishery Management Council (GMFMC), the Gulf States Marine Fisheries Commission (GSMFC) mailing list, the National Marine Fisheries Service (NMFS), various state extension offices, and state agencies for distribution. R. Lukens suggested that the revised FIN brochure be reviewed by the GSMFC Commercial/Recreational Advisory Panel at the upcoming Spring Meeting. After some discussion, **J. O'Hop moved to scrap this version of the FIN brochure and rewrite and redesign the entire brochure. There was no second to the motion. M. Osborn moved to present the FIN brochure to the GSMFC Commercial/Recreational Advisory Panel for their comment. The motion was seconded and passed with J. O'Hop opposed.**

Discussion of Bycatch Definition

At the RecFIN(SE) meeting held in September 1997, L. Kline stated that she would send the Atlantic Coastal Cooperative Statistics Program (ACCSP) Bycatch Proceedings to this Committee to discuss the issue of bycatch definitions. D. Donaldson reported that yesterday at the ComFIN meeting, that Committee agreed to change the word *bycatch* to *discards* for data collection purposes. M. Osborn noted that the ACCSP definition includes *discards and protected species interactions*. After lengthy discussion the Committee agreed on the following definition:

Discards are that portion of the catch of marine resources that are not landed, whether discarded live or dead. Protected species interactions include any interactions as defined by state and federal statutes.

(Footnoted with state and federal statutes)

M. Osborn moved to adopt the definition of *discards*. The motion was seconded and passed unanimously. This definition will be sent on to the Data Collection Work Group for their work in developing this module.

Update and Status of the Atlantic Coastal Cooperative Statistics Program (ACCSP)

L. Kline reported that the ACCSP has developed an Implementation Plan, now known as the Program Design Document, and is working on Technical Source Document IV. When this document is complete the ACCSP will ask the RecFIN/ComFIN for comments on both documents. The Program Design Document has been reviewed by the ACCSP technical committees and in March it will be given to the Advisory Committee. The public comment period will be through the end of April then it will go back to the Operations Committee for finalization. The document will then go to the Coordinating Council for approval.

R. Lukens suggested forming an Ad Hoc work group comprised of FIN and ACCSP Committee members to review the FIN Program Design Document and the ACCSP Program Design Document for comparison. Known as the FIN/ACCSP Compatibility Work Group, members will be L. Kline, R. Lukens, D. Lupton, M. Osborn, N. Nicholson, J. Shepard, M. Alexander, B. Beal, and B. Joule. The work group will hold their initial meeting sometime in the end of May 1998.

Discussion and Review of Program Design Document for ComFIN/RecFIN

Committee members began the review and edit of the draft FIN Program Design Document and completed sections I, II, and III. These revisions represent the administrative record for this portion of the meeting. **R. Lukens moved to have the Ad Hoc Compatibility Work Group address the issues of confidentiality, and verification of self-reported data and report to this Committee at the Fall 1998 meeting. The motion was seconded and passed unanimously.** Given the time restraints at this meeting and the lengthy process of editing the document, the Committee agreed to have the revised Program Design Document reviewed and edited by the Ad Hoc Compatibility Work Group in May and presented at the Fall 1998 meeting. Committee members should send any comments or corrections to D. Donaldson by March 25, 1998.

Discussion of Vessel Registration System/Fishery Information System

J. Poffenberger reported that the Core Design Team is meeting on March 4 and 5 and will review comments they have received to date on the Vessel Registration System/Fishery Information System (VRS/FIS). M. Osborn noted that the *Federal Register* notice will be out in March, then there is a 60 day public comment period after which it will go to Congress sometime in late June or July. Committee discussion followed concerning the need for input on the VRS/FIS from the states, Commissions, FIN, PacFIN, ACCSP, etc. R. Lukens noted that a national data collection program is the ultimate goal and input from all entities is critical. A letter from the Core Design Team stated that the NMFS would be initiating meetings with the interstate Commissions in the January - March timeframe to discuss options and preferred alternatives concerning the VRS/FIS. M. Osborn noted that the Core Design Team will be meeting next week. Another draft plan will be developed at that time to go into the *Federal Register* and there is still time to schedule meetings with interested parties. J. Poffenberger suggested that a meeting be held before July 1, 1998.

Time Schedule and Location for Next Meeting

D. Donaldson reported that the meeting rotation calls for the Caribbean to be the location of the Fall 1998 meeting. The Committee agreed that the meeting will be held in Puerto Rico from September 23 to 25, with the last week in September being the alternate date, and Atlanta, Georgia

being the alternate location. Staff will work with members from Puerto Rico and investigate possible locations in the Ponce area. Committee members will be notified of final plans.

There being no further business, the meeting was adjourned at 12:15 p.m.

M. M. Karasick
COMMITTEE CHAIRMAN 11/11-98

SOUTHEAST RECREATIONAL FISHERIES INFORMATION NETWORK [RecFIN(SE)]

MINUTES

Orlando, Florida

February 24 and 25, 1998

Chairman Joe Shepard called the meeting to order at 1:35 p.m. The following members, staff, and others were present:

Members

- Steven Atran, GMFMC, Tampa, FL
- Bob Dixon, NMFS, Beaufort, NC
- Lee Green, TPWD, Rockport, TX
- Stephen Holiman, NMFS, St. Petersburg, FL
- Lisa Kline, ASMFC, Washington, DC
- Wilson Laney, USFWS, Raleigh, NC
- Skip Lazauski, AMRD, Gulf Shores, AL
- Craig Lilyestrom, PRDNER, San Juan, PR
- Ron Lukens, GSMFC, Ocean Springs, MS
- Doug Mumford, NCDMF, Washington, NC
- Nick Nicholson, GDNR, Brunswick, GA
- Joe O'Hop, FDEP, St. Petersburg, FL
- Maury Osborn, NMFS, Silver Spring, MD
- Tom Schmidt, USNPS, Homestead, FL
- Joe Shepard, LDWF, Baton Rouge, LA
- Tom Van Devender, MDMR, Biloxi, MS

Others

- Page Campbell, TPWD, Rockport, TX
- Martha Norris, FDEP, St. Petersburg, FL
- Tom Sminkey, FDEP, St. Petersburg, FL

Staff

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

Approval of Agenda

The agenda was approved as written.

Approval of Minutes

The minutes of the meeting held on September 24 - 25, 1997 in San Antonio, Texas were approved with minor editorial changes.

Development of a Data Collection Document of Recreational Fisheries in the Southeast

R. Lukens reported that this issue was addressed at the ComFIN meeting held on Monday, February 23, 1998. The ComFIN Committee, at that time, approved a motion to have the Gulf States Marine Fisheries Commission (GSMFC) develop a request for proposal (RFP) during 1999 to initiate a study to determine data needs for conducting stock assessments. Lukens reviewed the handout, "Process for Developing Annual Data Collection Plans". The initial process would be contracted out to conduct a project to analyze existing data bases regarding the species listed on the handout (Attachment A). The report would determine where an increase in data collection for specific items would be necessary and where data collection would need to be initiated for areas with no information. The impetus behind this exercise is to begin the process of integration between the data collection process and those involved in conducting stock assessments.

Lukens stated that this study is being viewed as a demonstration project. The Fisheries Information Network (FIN), Atlantic Coastal Cooperative Statistics Program (ACCSP), the Caribbean, the National Marine Fisheries Service (NMFS), and the Gulf of Mexico Fisheries Management Council (GMFMC) need to determine their data needs in order to develop an initial data collection plan. This approach is a preliminary step to determining data needs for stock assessments. W. Laney suggested contacting a professional organization such as the American Fisheries Society to ascertain what basic data are needed for stock assessment on a given species. D. Donaldson noted that the Fisheries Information Network (FIN) Committee developed the sample list of priority species. S. Atran expressed concern over the fact that there were no offshore fish on the sample species list. Committee members agreed to add triggerfish and gray snapper to the sample species list. Lengthy discussion followed and **W. Laney moved to initiate a study to determine data needs for conducting stock assessments and to decide if this tool is sufficient for integrating data collection needs. The move was seconded and passed unanimously.**

Development of Methods for Compiling Information Regarding Non-Hook and Line Fisheries

D. Donaldson noted that this agenda item is Task 12 of the RecFIN(SE) 1998 Operations Plan. Committee members developed a list of non-hook and line gear and divided the list into two categories, finfish and crustaceans. The matrix represents the administrative portion of this

meeting (Attachment B). Staff will develop two matrices, one for finfish and one for crustaceans. Included will be information currently being collected, the magnitude of activity will be described, i.e. statewide or localized, management concerns and conflict, licensing and permits, ongoing state data collection activities, etc.

Development of Methods for Compiling Data Concerning Private Access Groups

This agenda item is Task 13 of the RecFIN(SE) 1998 Operations Plan. The Committee has charged the Biological/Environmental Work Group with developing a plan for compiling an inventory of private access sites. The work group will refer to the ACCSP Technical Source Document 3 for criteria and sources.

Development of Methods for Compiling Information Regarding Night Fishing

This agenda item is Task 14 of the RecFIN(SE) 1998 Operations Plan. M. Osborn distributed copies of the Marine Recreational Fisheries Statistics Survey (MRFSS) Wave 1 & 2 meeting summary (August 4th and 5th, 1997) which addresses the subject of night fishing (Attachment C).

M. Osborn reported that the MRFSS plans to include information on night fishing in site registers by 1999. J. Shepard noted that the Charter Boat Survey could also include this information. After discussion, it was agreed that T. Sminkey of the Florida Department of Environmental Protection (FDEP) and an MRFSS staff member will examine intercepts and telephone data to determine the magnitude of night fishing. The Committee charged the Biological/Environmental Work Group with the task of developing recommendations on how to determine night fishing on a state by state basis.

Development of Methods for Compiling Data on Fishing Tournaments

This agenda item is Task 15 of the RecFIN(SE) 1998 Operations Plan. The Committee agreed to have staff contact the states and request a list of marine fishing tournaments conducted in each state. Information requested will include contact points, duration, species focus, location, and time of year. W. Laney suggested including information on anadromous species.

Update on Charter Boat Pilot Survey in the Gulf of Mexico

D. Donaldson reported that the Charter Boat Pilot Survey was started in September of 1997 in the states of Alabama, Mississippi, Louisiana, and the west coast of Florida including the Keys, in conjunction with the NMFS and the GSMFC. The pilot survey compares several different methodologies to improve charter boat effort estimates in the Gulf of Mexico. The states involved are doing the field intercepts for the charter boat mode only. The MRFSS phone methodology is being conducted by the contractor, and the states are conducting a phone survey of the charter boat captains on a weekly basis. The vessel frame includes all charter boat vessels in the Gulf of Mexico, approximately 2,500 boats. S. Lazauski noted the importance of updating the frame. Donaldson noted that the response rate for the telephone survey is about 70%.

M. Osborn reported that D. Van Voorhees will be giving a presentation at the upcoming American Fisheries Society (AFS) meeting in Lexington, Kentucky. This presentation will include preliminary results from Wave 5 and 6. M. Osborn will send copies of this presentation to Committee members. Donaldson noted that the charter boat captains were told that they would be given feedback, and a newsletter and brochure are planned for this purpose. The newsletter will also be sent to Committee members and the information will be on the NMFS website.

M. Osborn noted that non-coastal zones in four states will be sampled starting with Wave 3, and programs for new estimates have been completed. This change in the MRFSS methodology may affect the Charter Boat Survey.

The Committee discussed the subject of Texas' involvement in the Pilot Charter Boat Survey. R. Lukens noted that Texas Parks and Wildlife Department (TPWD) is not currently participating in the survey since the MRFSS is not conducted in Texas, however they have been involved in the planning process. This will insure that in the future all Gulf states will be using the same methodology. L. Green noted that TPWD is open minded concerning the Pilot Charter Boat Survey, however they are satisfied with the current situation. D. Donaldson noted that this matter is addressed in the Recommendations Document for RecFIN and is also identified as a task in the 1998 Operations Plan.

R. Lukens stated that in the early stages of the Pilot Charter Boat Survey, there was an agreement with the NMFS Beaufort Head Boat Survey that no head boats on the Beaufort list would

be called by the Charter Boat Survey. B. Dixon reported that approximately a year and a half ago the Beaufort Head Boat Survey began to include vessels that carried 7 or more passengers. The Committee discussed the problem of defining head boats, charter boats, and guide boats and the differences in the Atlantic and the Gulf of Mexico. The issue of expanding the Beaufort Head Boat Survey was also discussed, and several Committee members expressed concern. R. Lukens recommended that definitions not be established for for-hire vessels at this time. M. Osborn noted that any changes taking place during the Pilot Charter Boat Survey could be very damaging to this program. B. Dixon stated that he would continue to send a list of vessels included in the head boat survey and no new boats will be added to that list. Staff will send a list of vessels included in the Charter Boat Survey to B. Dixon. S. Lazauski suggested that no changes be made for the remainder of the year and any changes made after that will be discussed by and agreed to by Committee members.

Final Approval of 1998 Operations Plan

Committee members reviewed the 1998 Operations Plan, and earlier modifications to the Plan were noted. S. Lazauski of Alabama will give a presentation on the Inshore Creel Survey at the fall 1998 meeting. M. Osborn reported that work is being done to improve the site selection process. This will be implemented on the Pacific coast in 1998 and Osborn will give a report at the fall 1998 meeting. **D. Mumford moved to approve the 1998 Operations Plan as amended. The motion was seconded and passed unanimously.**

Other Business

M. Osborn reported that the procurement RFP should be available on March 12, 1998. Some of the options incorporated are alternate site selection procedures, minimum data elements, social/economics, biological, etc. Options being included are to do the Caribbean and Western Pacific, biological sampling, license frame sampling in any state, non coastal county dialing, charter boat sampling frame, anadromous experiments in selected states, etc. Osborn noted that all Committee members will be mailed the procurement documents when they are available. N. Nicholson requested an update on the MRFSS annual review process. M. Osborn reported that

a broadcast FAX list has been established and will be utilized until the automated e-mail system can be perfected. The preliminary estimates for Waves 5 and 6 will be distributed to those who have immediate needs by the end of this week, then the data will be reviewed at the Wave meeting, and final estimates will be available sometime in March.

After lengthy discussion on the subject of quota monitoring, the Committee agreed to address the issue at the fall 1998 meeting. D. Donaldson outlined the possible agenda items as: general overview of quota monitoring, presentation on quota monitoring by Rex Herron, recommendations regarding the red snapper issue, and discussion of development of quota monitoring system.

There being no further business, the meeting was adjourned at 11:00 a.m.

PROCESS FOR DEVELOPING ANNUAL DATA COLLECTION PLANS

Initial Process

- Compile available data for (initial species used to develop the process)
 - spotted seatrout
 - sheepshead
 - Spanish mackerel
 - Gulf flounder
 - southern flounder
 - black drum
 - red drum
 - striped mullet
- Conduct an evaluation and analysis of the data regarding applicability to stock assessments
 - maturity schedules
 - size-at-age (lengths and weights)
 - catch-at-age
 - age-specific rates of F
 - other pertinent factors
- Develop recommendations regarding species-specific data deficiencies
- Recommendations for data collection needs will be put into the form of a data collection plan

Routine Process

- Following the conduct of stock assessments (state, interstate, or federal), data needs will be identified and put into the subsequent years' data collection plans
- Emergency data needs will be identified and added to the current year's data collection plan

ATTACHMENT B

	MAY BE COLLECTED		COLLECTED BUT NOT IDENTIFIED		NOT COLLECTED	
	Finfish	Crustacean	Finfish	Crustacean	Finfish	Crustacean
Spear fishing equipment					X	X
Gig	X					
Cast net					X	
Dip net					X	X
Hand line						X
Gill net and trammel net			X			
Trawl and frame net			X			X
Rake, tongs, dredge, shovel						X
Traps/pots			X			X
Hands			X			X
Seine			X			
Marine life gear (slurp guns, etc.)					X	X
Noose						X
Bush line						X
Bully net						X
Archery equipment			X			X

MRFSS Review Meeting Summary
Northeast and Southeast Regions
Waves 1 & 2 1997

August 4-5th, 1997
Holiday Inn
Singer Island, Florida

In Attendance:

Quantech Regional Representatives: Bob Sonier (VA), Cindy Harris (MD&DE), Dean Miller (NY), Dan Stawinski (NJ), Bob Censabella (RI), Bill Lake (LA), Bill Eames (FL), Gerry Maxwell (MS, AL, FLW), Curtis Butler (FLW), Tim Hudson (SC),

State Representatives: Doug Mumford (NC DMF), Dana Winkelman (FL DEP)

Quantech Home Office: Kim Dawson, Josefina Lago

Macro International Inc.: Greg Mahnke

NMFS: Ronald Salz, Steve Meyers

Review of Site Sampling Workshop

Ron Salz gave a quick overview of the previous wave meeting workshop dedicated to site sampling that was conducted in Silver Spring. Out of 37 total brainstorming ideas that came out of this workshop, NMFS approved 9 planned changes for the intercept survey. R. Salz went over each of these nine proposed changes which included an official definition of "fishing pressure" for site register updates.

Night/Early Morning Workshop

Introduction: R. Salz gave an introductory presentation which explained the purpose for and objectives of the night/early morning fishery workshop. He mentioned that MRFSS night sampling coverage has been identified as a data gap by various interstate fisheries information networks and this issue has also come up at public hearings and other fisheries managements forums. He asked the workshop participants to think about night/early morning fisheries in their survey areas and in particular to focus in on the following set of questions/issues:

- What is the true distribution of effort by time of day?
- Are intercepts currently conducted proportional to this distribution?
- What variables are affected by time of day (e.g catch rates, target species, fish size etc.) ?
- What are the problems/drawbacks with sampling at night?
- Do the site pressures reflect night fishing activity?

R. Salz also discussed how most fish activity can be grouped into diurnal, crepuscular, or nocturnal. Studies have shown that many predatory fish groups that are pursued by anglers tend to feed most actively during the dusk/dawn crepuscular period. Predators have adapted certain evolutionary advantages to feeding during this twilight changeover period.

R. Salz presented data from the MRFSS intercept survey (1994-1996) which showed differences in species targeted during peak hour (9am-6pm) interviews and off-peak (6pm-9am) interviews. For the cells presented there were some significant differences in what people fished for by time of interview. This suggests that at least for some cells day/night catch rates may also be significantly different.

Telephone Survey Results: Greg Mahnke presented some data from the random-digit dialing MRFSS telephone survey (Waves 1 and 2 1997) to get at the question of " what is the distribution of trips by time of day?". The percent of night fishing trips was highly variable by state/wave/mode cell examined but sample sizes were too small in many cases to consider differences significant. Some of the regional representatives were surprised at how high the percent of night fishing trips was in their states. R. Salz mentioned that the telephone survey only includes coastal county angler responses. He asked the reps if coastal county resident anglers (i.e. "locals") were likely to do more of their fishing at night than non-coastal/out-of-state anglers. Most said that "locals" do tend to do more night fishing. Therefore, the percent of night trips from the telephone survey may be biased up, especially in states with large out-of-state components.

Intercept Survey Coverage: Josefina Lago presented data from the intercept survey to get at the question of "does the intercept

coverage proportionally sample the true day/night trip distribution?". The waves/years J.Lago used were different from those G. Mahnke used for the telephone survey presentation. The definition of "night" fishing and the time intervals used for overheads were also different. It was agreed that the next time we compare data from different sources we should get together beforehand to settle on what data to use and how to present it. Despite these differences it was still obvious that the percent of night fishing covered by the intercept survey was far below the percent from telephone data. Even considering the potential bias between coastal and non-coastal/out-of-state night fishing rates (mentioned above) it still appears that for most cells the intercept survey under-samples night fishing activity.

Break-out Group Brainstorming Sessions : Next the workshop participants split up into smaller workgroups to consider the questions R. Salz posed at the outset and the data presented. Brainstorming lasted for about one hour and was followed by workgroup leaders presenting their groups ideas. These are given below:

North Atlantic and Mid-Atlantic Group (Dean Miller reporting)

1. Brainstorming of night fishing issues at local wave meetings.
2. Night site visits of all sites for pressures
3. Distinguish between day/night site pressures on the register
4. Split night/morning fisheries into 3 time slots (e.g. 7-10pm, 10pm-5am, and 5am-8am). Identify which slots are at which sites and note peak times within each slot, if possible.
5. Average weight of some species (bluefish, striped bass) probably greater at night than daytime.
6. Special night regulations for some species (e.g. striped bass in Maryland: no targeting or possession after dark)
6. Other points to consider: safety issues, site closures at night, light availability for recording data.

Specific Night Fisheries:

shore mode: striped bass, bluefish, weakfish, summer flounder, black drum (NJ&DE Apr./May)

Boat Modes: striped bass, bluefish, weakfish, tuna, shark

Twilight Fishing: silver hake (NJ), Atl. Herring (waves 2&6)

South Atlantic Workgroup (Doug Mumford Reporting)

1. Use telephone survey to determine proportion of day/night trips by wave/mode.
2. Modify site register to reflect/determine night fishing pressures

3. Treat night sampling as a separate strata and sample accordingly.

4. Problems with night sampling:

- some people don't like to work at night
- safety factor
- equipment considerations
- angler attitudes may be less cooperative at night
- locked facilities at night

Specific Night Fisheries:

shore: red drum, spotted seatrout, weakfish, sharks, croaker, spot, kingfish, flounder, striped bass
private/rental: flounder (gig), shark, reef fish (some), red drum, bluefish, black drum
charter: late arriving boats

Florida and the Gulf of Mexico (Gerry Carr reporting)

1. Identify sites with significant night fishing
2. Define night fishing as separate "mode" or "site"
3. Identify times of significant night fishing
4. Add following to Quantech availability form:
 - a) would you be available for night sampling (times)?
 - b) would you prefer night work?
5. Recruit "night fishing" interviewers
6. Offer night sampling bonus
7. Give interviewers portable lights
8. NMFS could provide reps tables with data on night fishing prior to night fishing site visits
9. Factors affected by time fished:
 - size/weight: not significant
 - species: significant in FL and south Gulf
Not in North Gulf as much
 - angler experience: night anglers tend to be more experienced (shore mode in particular)
10. In very hot areas you find more night fishing during the summer as the heat keeps people indoors during the day.

Specific night/early morning fisheries:

South Florida

early morning: snook, barracuda, dolphin, little tunny, bonefish, jacks, snapper
night: snook, barracuda, dolphin, shark, bonefish, black drum, southern flounder (gigging), bluefish

Gulf

early morning: spotted seatrout, red drum, king mackerel, cobia, kingfish, black drum
night: spotted seatrout, red drum, black drum, shark, snook, tarpon (catch and release), so.flounder

Following the group reports there was some general open discussion and synthesis of the workshop goals and objectives.

point that came up was that if we treat night fishing as a separate strata we need to decide if we are going to stratify by time of interview (end of trip) or by time actually fished. For example, if an angler is interviewed at 8pm but began fishing at 9am, the majority of this trip was day fishing. If we stratify based on interview time we must take into account average trip duration and work that into our sampling formula. A less biased approach may be to add a screener question which identifies which anglers fished primarily during the day or night and sample accordingly. We could establish rules such as only trips where 50% or more of the fishing took place at night could be counted toward a night sampling quota.

Several workshop participants were confused as to the definitions of night/early morning fishing. Some thought it should be based strictly on time of day (seasonally constant) while others felt that it should be based on sunrise/sunset times (seasonally varying). If we plan to add a night fishing strata these definitions need to be determined up front.

R. Salz closed the workshop but saying that he hoped this at least got people thinking about these fisheries when they are out interviewing. The regional reps should relay this to their interviewers at follow-up local wave meetings.

Other MRFSS Issues

R. Salz talked briefly about some of the problems experienced in the field regarding hostile sites. He showed an overhead with a section from the revised Fishery Conservation and Management Act that protects fishery data collectors (and contractors) from harassment in the field.

R. Salz talked about the capacity of spring scales used to weigh fish in the field. Currently most interviews have a 4lb and a 25lb scale. For some species that routinely are bigger than 25 pounds (e.g. striped bass) we may be biasing our average weight low since we cannot weight these bigger fish. Doug Mumford said that his interviewers use state purchased 50lb scales in the field. R. Salz said he would seriously consider this potential bias and discuss it with MRFS program staff.

Review of MRFSS Catch and Effort Estimates 1997 Waves 1&2

Steve Meyers led the Southeast review and Ron Salz led the Northeast review. Comparison tables (1992-1996 mean versus 1997) and routine MRFSS tables were looked at closely. Data for the most part were very clean. A few notable estimates included: striped bass in wave 2 for MD and NC were very high compared to previous years; Atlantic mackerel in wave 2 for NJ were abundant (pulse fishery); total trips in wave 2 for VA were very high compared to previous 5-year mean.

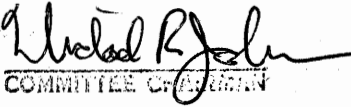
Review of MRFSS Intercept Survey Results 1997 Waves 1&2

Kim Dawson explained some of the shortfalls in wave 1. Detailed explanations can be found in the wave reports. There were no shortfalls during wave 2. R. Salz added a few comments based on review of the wave meeting tables. He noted that in some states (Alabama in particular) the percent of Type A fish (available for inspection) weighed was very low. R. Salz emphasized the importance of length/weight data to the survey, and in particular for key management species such as red snapper, king/spanish mackerel, striped bass etc.

Review of MRFSS Telephone Survey Results 1997 Waves 1&2

Greg Mahnke presented data from the telephone survey. His presentation focused on data from the Southeast Economic Telephone Add-On. Percent responses to the following questions were shown in overheads: "reason for not fishing?"; "target species?"; "what would you do if sale of recreationally caught fish was prohibited?"; "Do you expect to catch the bag limit?"; "ever seen license inspection officer?"; "employed?"; "race?"; "gender?"; "income?"; "has management of species X caused you to change fishing behavior?". Meeting participants were very interested in these kinds of data.

Meeting Adjourned



 COMMITTEE CHAIRMAN

Flounder Technical Task Force
WORK SESSION SUMMARY
 Wednesday, February 25-26, 1998
 South Florida Regional Laboratory

Due to the lack of a quorum, the members present adjourned to a work session at 8:27 a.m. A microwave tower directly behind the building resulted in feedback on the recorder, and the session was not recorded.

Those in attendance included:

Members

Mike Johnson, *Chairman*, FDEP/FMRI, Marathon, FL
 Becky Hensley, TPWD/CF, Corpus Christi, TX
 Mike Brainard, MDMR, Biloxi, MS
 Chuck Adams, UF Sea Grant, Gainesville, FL

Staff

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

The following notations were made during the work session:

- Standard metric abbreviations do not need to be defined within the document.
- Add an abbreviation page within the FMP.
- Throughout the document - lower case GULF as in gulf flounder — not Gulf flounder.
- When Lucia finally edits this document, make sure she has a copy of *Transactions* guide for authors.
- At first occurrence of a species, name commonly & specific species. At second occurrence, just use the common name.
- 1997 data will be available in April - Let's update the document to include that data. Steve VanderKooy, put in a request for all data (landings, gear, etc.). Chuck will send Steve a letter with his list of information needed.
- Mike Johnson found Table 9 for section 3 and handed it out from Stuntz's thesis. Becky will check for more information.
- Mike Brainard - use creel survey data in Mark Van Hoose's section.
- Mike Brainard will work on the distribution map for Mike Johnson.
- Southern flounder reported caught just north of Marathon — may insert in FMP if FL publishes a range extension.

Section 3

- page 1 Include TX cite on range.
- page 1 Distribution map - Mike Brainard.
- Table 1, Should it be in an appendix or within the section?

- *Transactions* says don't use lines within tables; do we want to follow that? For clarity sake, put lines in the tables. Disregard AFS *Transactions* rule here.
- IJF Staff will go through the document at some point and make sure it adheres to the agreed upon format.
- page 2 Steve Hein, check measurement in 3rd paragraph.
- page 3 Fort Jackson cite - Steve VanderKooy check.
- Mike Johnson is in process of incorporating all the literature cites for section 3 into ProCite and will give us the file when completed.
- Let Dave Ruple pick up most of the habitat portions from the life section. Generalize in the biology section.
- page 9 Need full cite from Balon 1975 - Becky Hensley get to Mike Johnson.
- Becky Hensley will edit the ambicolor paragraphs beginning on page 14.
- page 15 Check with Steve Hein on last paragraph on ambicoloration, which species?
- page 16 Becky check coast-wide.
- Use arabic numerals for age age 1, age 2, etc.
- page 17 Wright et al. Becky Hensley check.
- pages 17-18 Nall problem again - disclaimer - put in as on page 20.
- page 19 Mark Van Hoose, add specific information on 604 mm TL gulf flounder.
- page 20 Mike Johnson will run length-weight data set.
- page 21 Cite Music and Pafford. Did they use total or standard weight? Steve Hein check.
- bycatch, don't hyphenate.
- page 23 Alabama current size and date are still needed from Mark Van Hoose.
- page 23 Fisheries independent data sex ratios - Steve VanderKooy will check.
- page 27 Steve Hein - river name cited by Devries and Harvell?
- page 27 Edit last two paragraphs incorporating Smith 1981 sentence into Green (1986) paragraph.
- page 28 Reformat to Perret et al., Dahlberg 1972, Swingle and Bland 1974, etc.
- page 28 Life cycle diagram is needed, Mike Johnson will work on.
- page 30 Is a figure necessary? No.
- page 32 Females release eggs, not lay.
- page 31 Hawkins 1982 paper is needed to include information. Steve VanderKooy to check the drawer of information Steve Hein gave us for that cite.
- page 32 Turner and Johnson 1974 paper is needed, no one seems to be able to find. Steve VanderKooy to work on.
- page 33 Cite the report not TPWD.
- page 33 Take out UPGMA.
- page 35 Do we have any *pfisteria* in the gulf? No, we have *pfisteria*-like organisms. This topic fits best under habitat.
- page 36 Reword the last two sentences in first paragraph to read, "Piscine trypanosomes are transmitted into the hosts' bloodstream by feeding leeches and rarely cause disease."
- page 37 Check. If Topp and Hoff (1972) is *similis*, it's longnose killifish. If from the Hourglass Cruise off Tampa Bay, it is *similis*. At that time though, the name was *majalis* and has since changed. This needs to be explained in a footnote.

- Table 8 Separate into species. Just tabularize length. Remove weights from the table. Make sure growth is in the text, but it is not necessary as a table. Note method for aging somewhere.
- Table 9 If no table, add a bit more in the text (GSI).
- Table 7 Reformat with states on the side. Two tables one for gulf, one for southern.
- Table 13 Explain in a footnote that *Orthopristis chrysopterus* has changed to *Orthopristis chrysoptera*.
- Southern flounder, see *Micropogonias undulatus* would not have been referred to as such by Darnell 1958.

Section 4

- No revisions have been made since the last meeting

Section 5

- Steve VanderKooy reviewed changes he made since the last meeting.
- page 1 First sentence was left at not “highly migratory.”
- page 2 Should we add a list of refuges in the text under 5.1.1.2. Most either have coastal shoreline. It would be an extensive list. No, too cumbersome.
- Each state representative should expand the statement under their state which says ...Florida has a habitat protection and permitting programs and a federally-approved CZM program. Just a short paragraph per state representative.
- Add public law numbers for each one of the acts listed in the FMP in section 5.
- Dennis Johnston plans to send this section out to the state representatives on GSMFC’s Law Enforcement Committee for their review and update,

Section 6

- No revisions have been made since the last meeting
- Each state rep will draft verbiage for their state’s recreational and commercial fisheries to incorporate into the section and send to the GSMFC office for routing to M. Van Hoose.
- Table 16 Need volume only, value is in the economics section.
- Table 17 Landings by gear, by state was sent to M. Van Hoose by C. Adams, a table per state should be generated.
- Spell out fathoms at the first incidence.
- Fish age use arabic numerals.
- Literature cited, no comma between name and year.

Section 7

- Value is hard to discuss without discussion on landings, but it is possible. Need to refer back to section 6 though. Fluctuations in landings and value should be explained as in Texas

discussion on the prohibition of red drum and spotted seatrout commercial sales in 1981...and should also be explained and referred to in section 6.

- Check the use of percent. Use % not the word “percent” throughout.
- Steve VanderKooy, call Steve Hein re: “breakfast flounder.”
- Use commas in 1,000s.
- Recommendation - spearing on aggregation areas (landings by gear data),
- Steve VanderKooy, request information from Guy, monthly landings and dockside value monthly by state by gear type for the last five years.
- Recommendation - more data/studies needed for recreational information (impacts),
- S. Hein, Is there a consumption study for Louisiana that has information on flounder or seatrout? Louisiana Seafood Promotion Board - Carl Turner.

Section 8

- Considering the lack of anything sociological, he rearranged the table of contents which was a standard format for FMPs and didn't fit in this instance. He took what little information that was available and applied to flounder where it fit. Still much to do.
- The survey data from S. Smith should be incorporated when complete.
- C. Adams, send Steve the 1993 Sea Grant study.
- Double-check the Texas gig landings (more than total landings).
- State Representatives, update the list of organizations from the black drum and/or mullet plan.
- Becky Hensley will check CCA for angler information in Texas.
- Rob Southwick just completed a dive survey in Mississippi — may have some information for this section.
- Mike Johnson will contact a couple of dive groups on the west coast of Florida to see if they have anything.

Section 9

- Mike Johnson will get bloom information to D. Ruple.
- Becky Hensley will get information to D. Ruple also (22 million pounds killed in Texas).
- Brown tide is an identified species; Becky Hensley will get the species name.

Section 10

- Gear type specific to the flounder fishery, gig. If there is an issue specific to the fishery, it should be noted.
- 10.3.1 Note spawning aggregation through passes.
- Reporting landings broken down by species.
- Reporting of flounder sold to restaurants.
- Gear type license - Mississippi has no idea how many people are in the fishery in that state.
- Mexican imports, draft up something regarding international trade (10.6.4).

Timetable for Completion

The modified timetable follows:

October 31, 1997	Drafts to the GSMFC office - complete document to be mailed out to the task force prior to next review meeting
November 1997	Review meeting - work session on management recommendations, data requirements, review habitat section for first time
January 1998	Drafts to the GSMFC office for distribution prior to next review meeting
February 1998	Review meeting
May 29, 1998	All drafts; all revisions to the GSMFC office
June 1998	Review meeting
August 1998	Final review meeting - point edit the entire document
October 1998	Draft to TCC for action

June Meeting

Goal - complete draft of the FMP - all sections.

Revised drafts are especially needed for the habitat, description of the fishery, sociological, and stock assessment sections.

The next review meeting is tentatively scheduled for the week of June 15, 1998. Steve VanderKooy will check on accommodations at the Rockefeller Refuge in Louisiana or (as the second option) the Maison DuPuy in New Orleans.

DRAFT

Stock Assessment Team Meeting
MINUTES
March 3-4, 1998
Pensacola, Florida

Chairman Joey Shepard called the meeting to order at 1:34 p.m. The following participants were in attendance:

Members

Joe Shepard, *Chairman*, LDWF, Baton Rouge, LA
Billy Fuls, TPWD, Rockport, TX
Bob Muller, FDEP/FMRI, St. Petersburg, FL
Mike Murphy, FDEP/FMRI, St. Petersburg, FL
James Warren, IMS/USM/GCRL, Ocean Springs, MS

Others

Harry Blanchet, LDWF, Baton Rouge, LA

Staff

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

A quorum did not exist at this time and general discussion occurred. M. Murphy noted that he had attended the Atlantic States Stock Assessment Workshop recently. It was a five-day workshop, eight hours per day. The daily sessions were split with a lecture in the morning and hands-on computer lab in the afternoon. B. Muller mentioned another workshop which was held in Belize. They spent two weeks immersed in data analyses. The group agreed that the best way to do an assessment is to get the data together beforehand and sit down for a week to crunch the numbers. The problem is the time that is involved in getting the different data sets in a consistent format. The seatrout assessment has evolved from each state assessing their own area to B. Muller writing up a summary. He would like to include sufficient explanations of each state's methodology. The group suggested he include figures that compare the state data. He noted that he ran the data on several programs including ADAPT, but he could not generate the size-at-age that Texas had generated in their stock assessment.

The representative from Mississippi, Tut Warren (IMS/USM/ GCRL), arrived at 2:15 p.m. A quorum was established, and Chairman Shepard asked the group to review the agenda.

Adoption of Agenda

M. Murphy moved to adopt the agenda as presented. J. Warren seconded the motion, and the motion passed by consensus.

DRAFT

Approval of Minutes

B. Muller moved to adopt the SAT portion of minutes from the Joint SAT/Spotted Seatrout TTF meeting held September 8-9, 1997, in Pensacola, Florida. J. Warren seconded the motion, and the minutes were approved as written.

Review of State Stock Assessments

B. Muller presented Florida's stock assessment. Florida has a 15-inch minimum size restriction on seatrout. State-wide commercial landings show that landings and effort have dropped. The net ban caused a dramatic drop. Florida SPR values are below 35. In the northwest, SPR is in the middle 20s; in the southwest, SPR is in the high 20s.

From the available data in each state, the stock assessments will contain spawning biomass, recruitment, and spawning information. However, each stock assessment will be different, so he should describe differences in growth, maturity schedules, and general diversities (state regulations, etc.) of each state's fishery.

J. Shepard noted that Louisiana did not use a length-at-age key in their trout assessment. They used a growth equation. The Louisiana stock assessment has not been updated since the last meeting. B. Muller requested a copy of Louisiana's actual stock assessment.

B. Muller reported that Mississippi provided data on the commercial catch, commercial length, and an age-length key for females. The tuning index for a catch-at-age table is needed, and he would prefer sex-specific data rather than combined data. With this information, he will calculate a transitional SPR. J. Warren said he will provide the gill net data from Mississippi to B. Muller. A history of regulations in Mississippi is needed. Mississippi data indicates that there are no old fish. J. Warren noted that they had only caught two age-6 fish. Also, Mississippi sizes go down to five inches, but no age-0 fish are indicated.

B. Muller **still** needs the following information from each state through 1996:

- maturity schedules
- size-at-age (length and weight)
- catch-at-length
- catch-at age
- selectivity
- age-specific F rates
- tuning indices
- summary of regulatory changes (minimum size, slot limits, etc.)

B. Muller has not received any data from Alabama and needs it desperately in order to complete this project. All states should sent B. Muller data through 1996 immediately. If Lotus files are used, the highest version has can use is wk3 files. Feel free to use E-mail. Each state stock assessment will be housed at the GSMFC office for reference. The FMP appendix will contain data

DRAFT

contain data elements and methodologies used. The actual stock assessments are too voluminous to include within the FMP but will be referenced. Section 9 will be expanded.

Section 9.3

B. Muller distributed a draft of Section 9.3, Stock Assessment and Status of the Stock (Attachment 1). Thus far, the section contains Texas and Florida information. When all data elements are received from the other states, he will add the information.

Flounder Stock Assessment

The GSMFC entered into a contract with the TPWD for them to perform a Texas stock assessment on flounder. B. Fuls reported that Mark Fisher is compiling the data now for the flounder stock assessment. Age-4 flounder will be used with a male to female ratio of 1:7. Natural mortality will be .6. The assessment will span 1984 through 1996. A transitional SPR will be done. Most data will be recreational, but there will be a small amount of commercial data from fish houses. Gill net data will be used for the appendices. He probably will not use bag seine data. An age-length key was previously compiled from Matagorda Bay data. Data from the remainder of the Texas coast will be added for a complete picture. Bycatch characterization studies from 1993 -1995 exist for the entire coast and could be used for mortality. Flounder estimates were included in the study. The group noted the need for a relatively close estimate of natural mortality.

Information on night gigging is definitely needed. Most recreational fishery interviews are conducted during the day. There have been some special studies on wade bank fishing, etc. Some of that information may be used to fill in the gaps.

Mississippi has just begun cutting otoliths from the fish houses. Some age-length data is available from those collections.

Louisiana has some information. SEAMAP data should be requested.

Otolith Handbook Update

M. Murphy reported that the handbook outline was sent out to coeditors for input and comments. He has received comments from Bob Colura only. He may just expand the document with the technical support within his office.

The ultimate goal of the handbook is for technicians to cut a clear section. The handbook will be unique in that it will be species-specific. The basic consensus of the the group was that more feedback is needed to get this done. If possible, prompt the coeditors again. SAT members should send names of specific individuals to M. Murphy along with any information regarding techniques so he can prompt other otolith types for this badly-needed information.

DRAFT

Stock Assessment Training Workshop

M. Murphy did note that he attended the workshop in Alaska which was very good. It was interesting to see the different viewpoints. The workshop covered a very broad spectrum.

J. Warren reported that the framework for a short-course/workshop is in place through the University of Southern Mississippi's Institute of Marine Sciences. The Gulf Coast Research Laboratory can teach anytime during the year. Dormitory space is available on campus. A computer lab will be in place in the near future. A course could be developed as continuing education or by semester-hour credit. A five-week slot is currently available under fisheries management that can be adapted to a stock assessment syllabus. The actual workshop could be held during the last week of that course. Several names were recommended as potential instructors included Mike Prager and Phil Goodyear. The SAT agreed that this sounds like a good way to do this. A curriculum needs to be developed. The SAT would be a logical group to develop the syllabus and curriculum to lead up to the week-long workshop. S. VanderKooy will contact Lisa Kline to get outlines from the three workshops sponsored by the ASMFC to the SAT group. The SAT will send comments directly to J. Warren. B. Muller noted that simulation techniques to evaluate data sets should be included rather than just teaching the literature and relying upon models. M. Murphy reminded the group that the point of the stock assessment workshops was to refresh those who perform stock assessments and to expand the number assessors in the Gulf. Higher course levels must also be developed.

Next Meeting

B. Muller will keep S. VanderKooy informed of progress on the the stock assessment. A conference call in the near future may be in order to review progress and determine the need for a review meeting.

B. Muller moved to adjourn, and M. Murphy seconded. **There being no further business, the meeting adjourned at 10:35 a.m.**

9.0 MANAGEMENT CONSIDERATIONS

9.1 Definition of the Fishery

The fishery includes the harvesting activities for spotted seatrout, *Cynoscion nebulosus*, in the United States Gulf of Mexico.

9.2 Management Unit

Although spotted seatrout have been shown to migrate only short distances, spend their entire lives in inshore waters, and have geographically different growth patterns, genetic studies have demonstrated that sufficient mixing occurs such that spotted seatrout in the United States Gulf of Mexico can be considered a single stock.

9.3 Stock Assessment and Status of the Stock

The following subsections summarize the analyses and results of stock assessments conducted by the member states.

9.3.1 Texas

The basis of this summary came from Fisher (1996). The status of the spotted seatrout for Texas evaluated with sequential population analyses of catch-at-age data from 1984 through 1994 on a May - April fishing year basis. The assessment focussed on this period because the sale of spotted seatrout was prohibited in 1981 and in 1984 the minimum size was raised to 14 inches and the recreational bag limit was lowered to 10 fish. Also because of the sexual dimorphic growth (Age and Growth Section 3.2.XXX), assessments were developed for males and females separately. Although spotted seatrout tend to remain in a given bay system, genetic analyses indicate that there is sufficient mixing to prevent the establishment of sub-populations.

Recreational landings were estimated from annual creel surveys of boat anglers. Anglers catches were measured by fishery-dependent personnel. Sex was assigned to the landings using logistic regressions of the proportion of females by total length. Release mortality rate was not included in this assessment.

Numbers of fish by sex, total length, and year were assigned ages using sex specific age-length keys and applied to all years. The numbers of fish were aggregated by region, sex, and year into catch-at-age tables for sequential population analyses.

As with the other assessments, natural mortality was 0.30 per year based upon longevity and earlier work for spotted seatrout. Population sizes and instantaneous fishing mortality rates were calculated with the FADAPT programmed by Dr. Victor Restrepo at the University of Miami. The tuning index was the catch rate of age 1+ fish from fishery independent gill net sets.

The status of the stock was determined by comparing the observed fishing mortality rates

to benchmarks such as F_{MAX} and $F_{0.1}$ and . Unweighted, transitional spawning potential ratios (tSPR) were calculated from the estimated total mortality rates (natural + fishing), a logistic equation for proportion mature as a function of age, and the observed average weights by age.

In the Texas, total landings of females ranged from a high of 956,000 fish landed in 1987-88 to 268,000 fish in 1990-91 and males ranged from 480,000 fish in 1986-87 to 125,000 fish in 1990-91. In 1994-95, the landings were 700,000 females and 303,000 males. Seventy percent of the fish harvested in 1994-95 were females. The low landings in 1990-91 were attributed to a severe cold kill in December 1989-January 1990. The average, instantaneous fishing mortality rate for female fish in 1994-95 for all ages weighted by catch was 0.29 per year which is less than F_{MAX} (0.35 per year) and but higher than $F_{0.1}$ (0.22 per year). Fishing mortality rates for male seatrout were lower at 0.12 per year. The transitional spawning potential ratio for females was 37% in 1994-95 which, if sustained until all age classes were rebuilt, is expected to rise to 41%.

9.3.2. Louisiana

9.3.3. Mississippi

9.3.4. Alabama

9.3.5 Florida West Coast

The basis for this summary came from Muller et al. (1997). The status of the spotted seatrout on Florida's West Coast was evaluated with sequential population analyses of catch-at-age data from 1986 through 1996 on a calendar year basis. The fishery for spotted seatrout in Florida is divided into four regions: Northwest (Escambia through Pasco counties), Southwest (Pinellas through Monroe counties), Southeast (Dade through Volusia counties), and Northeast (Flagler through Nassau counties). Separate stock assessments are developed for each of the regions and for the purposes of the Gulf States Marine Fisheries Commission, the subsequent discussion will focus on the Northwest and Southwest regions only. Also because of the sexual dimorphic growth (Age and Growth Section 3.2.XXX), assessments are developed for males and females separately.

Separate catch-at-length tables were developed for the recreational and commercial sectors of the fishery. Commercial landings information was extracted from Florida Marine Fisheries Information System commonly referred to as the trip ticket program and recreational catch and landings came from the National Marine Fisheries Service's Marine Recreational Fisheries Statistics Survey (MRFSS) and were post-stratified into the two regions on the west coast using MRFSS's program developed by Dr. Gerry Gray. Commercial landings after conversion to number of fish landed were partitioned into total length and sex using information from the Trip Interview Program (TIP) collected by biostatistical samplers from fish houses. Recreational landings were partitioned into total lengths using the MRFSS length measurements from the appropriate region that were converted to total length from fork length. Sex was assigned using logistic regressions of the proportion of females by total length. A release mortality rate of 8% was applied to fish that were caught by recreational anglers and released

alive. Fish that were released dead were included in the landings.

Numbers of fish by sex, total length, and year were assigned ages using age-length keys. There were insufficient seatrout collected to develop annual age-length keys so some years were grouped producing age-length keys for 1986-1991, 1992-1994, and 1995-1996 by sex and region for a total of 12 age-length keys. The numbers of fish were aggregated by region, sex, and year into catch-at-age tables for sequential population analyses.

Natural mortality was 0.30 per year based upon longevity and earlier work for spotted seatrout. Age-specific selectivities were obtained with separable virtual population analyses assuming a terminal fishing mortality rate determined with Robson-Chapman catch curves on the 1995 numbers of fish with ages 3 or older and the assumption that selectivity on the oldest age class (age 6+) was 1.0. The elimination of entangling nets in July 1995 throughout Florida's waters and the implementation of narrower slot limits for spotted seatrout in 1996 necessitated conducting the sequential population analyses only through 1995 and then using the Baranov equation to estimate the fishing mortality rates for 1996. Population sizes and instantaneous fishing mortality rates were calculated with the FADAPT 2.0 programmed by Dr. Victor Restrepo at the University of Miami. The tuning indices included commercial and recreational, standardized catch rates and a young-of-the-year fishery independent index.

The status of the stock was determined by comparing the observed fishing mortality rates to benchmarks such as F_{MAX} and $F_{0.1}$ and . Unweighted, transitional spawning potential ratios (tSPR) were calculated from the estimated total mortality rates (natural + fishing), a logistic equation for proportion mature as a function of age, and the observed average weights by age. As per an outside stock assessment review panel recommendation (November 1994), the maximum age was 15 years.

9.3.5.1 Northwest Florida

In the Northwest region, total landings of females ranged from a high of 3,105,000 fish landed in 1988 to 735,000 fish in 1996 and males ranged from 1,730,000 fish to 241,000 fish in the same years. Again, these reductions in harvest mostly were in response to regulations. Seventy-five percent of the 1996 harvest was female. The average, instantaneous fishing mortality rate for ages 2+ fish was 0.44 per year which is less than F_{MAX} (0.68 per year) and but higher than $F_{0.1}$ (0.27 per year). Fishing mortality rates for male seatrout were much lower at 0.05 per year. The transitional spawning potential ratio was 22% in 1996 which is less than the management objective of 35% and if the current fishing mortality rate could be sustained, the management objective would not be expected to be achieved because the static SPR value for a fishing mortality rate of 0.44 per year is projected to be only 29%.

9.3.5.2 Southwest Florida

In the Southwest region, total landings of females ranged from a high of 1,337,000 fish landed in 1989 to 393,000 fish in 1996 and males ranged from 885,000 fish to 143,000 fish in the same years. These reductions in harvest mostly were in response to regulations. Seventy-three

percent of the 1996 harvest was female. The average, instantaneous fishing mortality rate for ages 2+ female fish in 1996 was 0.40 per year which is less than F_{MAX} (0.85 per year) and but higher than $F_{0.1}$ (0.32 per year). Fishing mortality rates for male seatrout were lower at 0.20 per year. The transitional spawning potential ratio for females was 25% in 1996 which is less than the management objective of 35%; however, if the current fishing mortality rate could be sustained until all of the age classes had rebuilt, the management objective could be achieved because the static SPR value for a fishing mortality rate of 0.40 per year is projected to be 40%.

APPROVED BY:

HB
COMMITTEE CHAIRMAN

**Spotted Seatrout
Technical Task Force Meeting**
MINUTES
Pensacola, Florida
March 4-6, 1998

Chairman H. Blanchet called the meeting to order at 1:38 p.m. The following members and others were present:

Members

Harry Blanchet, *Chairman*, LDWF, Baton Rouge, LA
Bob Ditton, TAMU, College Station, TX
Larry McEachron, TPWD, Rockport, TX
Bob Muller, FDEP/FMRI, St. Petersburg, FL
John Thomas Jenkins, ADCNR/MRD, Dauphin Island, AL (*proxy for J. Waller*)
J. Dale Shively, TPWD, Austin, TX
Terry Waldrop, Recreational Advisory, Gulfport, MS
James Warren, USM/IMS/GCRL, Ocean Springs, MS

Others

Joey Shepard, *SAT Chairman*, LDWF, Baton Rouge, LA

Staff

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

Adoption of Agenda

S. VanderKooy will discuss item #6, the economic section. C. Adams had a conflict and will not be attending. **B. Muller moved to adopt the agenda as revised. L. McEachron seconded the motion which passed without dissent.**

Approval of Minutes

J. Warren moved to approve the Spotted Seatrout TTF portion of the minutes from the Joint Stock Assessment Team/Spotted Seatrout TTF meeting held September 8-9, 1997, in Pensacola, Florida. B. Muller seconded the motion, and the minutes were approved as written.

Edit and Discuss Revisions

The task force reviewed and discussed individual sections. The following comments were made:

General Comments

- Add a list of abbreviations.
- Add Dianne Peebles to the acknowledgments.
- Add former program coordinators to the acknowledgments.
- Do a search for et al.; make sure that there is a period after al.
- Do not italicize et al., i.e., etc.
- Be consistent in the use of fishers, harvesters, anglers throughout document. Use: commercial harvesters and/or recreational anglers.
- Send B. Ditton and L. McEachron a copy of Deegan 1990.

Section 2 - Introduction

- 2.0 Change the second sentence. Seatrout may have been the most sought fish recreational species, but it is not the most sought commercial species.
- 2.2 Update the task force list to include D. Shively and J. Gill. Correct B. Ditton's affiliation.
- 2.3 Should we include former program coordinators?
- 2.4 Update the authorship list appropriately.
- 2.5 B. Ditton noted that the objectives should have a direct link to the recommendations that are made for the fishery.

Section 3 - Description of the Stocks

- Add aquaculture and stock enhancement to this section.
- Insert genetics information from Texas (sent to GSMFC).
- Tables 3.1, 3.2, 3.3 Combine into one table, use a double bar between the states, sort within each state by sex. The Alabama data is currently combined sexes. See if this can be sex specific. Are these true length-at-age or were capture size used or were the figures back-calculated? Reference by author what method was used, back calculated or capture size. Also note the methodologies in the text on page 3-7 just before the Florida section.
- If Bob Colura's paper on Indian midden sectioning is written up, it could present historical interest to the section.
- Do not put Von Bert figures in section 3; they will be in the stock assessment.
- 3.2.2.4 The sentence on size needs to be checked. Verify whether scales or otoliths were used.
- 3.2.3.1 Check Paschall 1986 (who has this cite?)
- 3.2.3.2.1 Need more cites for batch fecundity - add Weiting 1989?
- 3.2.3.2.1 Change first sentence of second paragraph to ...these mature fish would not actively spawn until age two second summer.

- 3.2.3.2.2.1 Remove the following cites: Guest and Gunter 1958, Tabb 1966, Adkins et al. 1979, Perret et al. 1980, and Mercer 1984.
- 3.2.3.2.2.1 First sentence to read ...varies throughout the Gulf but generally can be as early as March
- 3.2.3.2.2.2 Murphy and Taylor unpublished data is probably 1994.
- 3.2.3.2.2.1 First sentence change to read ...through the Gulf but generally can be as early as March...
- 3.2.3.2.2.1 Remove cites that are not original studies (Guest and Gunter 1958, Tabb 1966, Adkins et al. 1979, Perret et al. 1980, Mercer 1984). Add Tucker and Weiting?
- 3.2.3.2.2.1 S. VanderKooy to check the geographic range. H. Blanchet questioned singularly or bimodally, both spatially and temporally?
- 3.2.3.2.2.1 McEachron cite needed.
- 3.2.3.2.2.1 Remove the last sentence of the section - This may be due to varying techniques and research protocols, as well as different habitats and changing environmental conditions during the spawning season. B. Muller will draft a paragraph with references. L. McEachron suggested checking Baumgardner or Colura 1988 in Florida. H. Blanchet will check for Louisiana information. Put under fecundity.
- Table 3.4 Remove Hesler et al. 1993, use Hein, Shepard, Wieting cite.
- 3.2.3.2.2.3.1 & 2 Move after 3.2.3.2.2 (gonadal development) and before 3.2.3.2.2 (spawning).
- 3.2.3.2.2.3 Move Location and Effects of Salinity, Temperature, and Photoperiod except the last paragraph to the habitat section. Move the last paragraph to the beginning of 3.2.3.2.2.1 (spawning season and time).
- 3.2.3.2.3 Table 3?
- 3.2.3.2.3 Combine second and third paragraph and change the last sentence to read, Adkins et al. 1979, Adkins and Bourgeois (1982), Tucker and Faulkner (1987) and McMichael and Peters (1989) have suggested a monthly periodicity in spawning associated with a full moon.
Delete the paragraph beginning The consistency of these reports suggests...
Delete the first sentence of the paragraph beginning Most studies support the production of a "batch" every 21 days...
The next sentence should reflect: "Brown-Peterson et al. (1988) calculated a mean batch fecundity of 451 ± 43 eggs/g of ovary-free body weight from 14 fish with hydrated oocytes and no post-ovular follicles. They expressed the batch fecundity as [put in the correct (459,469) equation]." Check whether it is 459 or 469.
Delete the sentence beginning Although hypothetical, these estimates are in the range of annual fecundity estimations by Brown-Peterson et al. (1988)...
- The literature shows the variability of spawning. repetition in this section should be removed. Rearrange to make clear.
- How many times can a fish spawn? B. Muller suggested we add a sentence such as: "For example, a two pound fish that spawns eight times in a season would produce approximately three million eggs."
- 3.2.4 Parasites and Diseases, B. Muller will (re) e-mail Florida parasite information.
- 3.2.5 Feeding, Prey, and Predators, Add Mason Gulf of Mexico Science paper from H. Blanchet.
- 3.2.7 Movement and Migration.

H. Blanchet to check Adkins et al. 1979.

J. Warren add Mississippi tagging studies.

L. McEachron check Bowling 1996 for the greatest distance traveled. Split this sentence into two points: 1) release in Gulf moved to bays and 2) greatest distance traveled.

- TPWD 1973 check cite.
- Baker 1986, north-south movement, reference geographically - L. McEachron checked this — exit of fish from the bayou into the bay as the water warmed, then back into the bayou in the winter months

Description of Essential Habitats

D. Shively has moved the portions from section 3 into section 4. He needs input from the states. Under each habitat type, there is a subsection called habitat status which should discuss the effects on harvest and marketing. General information will describe that habitat is essential to the development of the species and does affect how many fish are available to harvest and market. Descriptions of the grass beds, etc. will be included. He will note that the species are somewhat adaptable but not to the point that it is interpreted that if you destroy one habitat type, the fish will just move to another. Natural and anthropogenic topics will be covered. Red tide, brown tide, and pfisteria-like under natural. Population impacts (septic, etc.) under anthropogenic. L. McEachron suggested D. Shively contact Scott Holt at the University of Texas. He has done larval seatrout work and may be able to send papers. D. Shively reported that he will have the Habitat Subcommittee review his draft at their March meeting. J. Warren will send S. VanderKooy a paper by Toni Lowry which may have some utility for this section. B. Muller will get Florida information from Kevin Peters. Peter Rubec (Florida) is currently working on a habitat suitability index for seatrout. After revision, D. Shively will send the draft to S. VanderKooy for distribution to the task force.

Section 5 - Fishery Management Jurisdiction, Laws, and Policies Affecting the Stock(s)

This section will undergo constant change until the publication is “put to bed.” By consensus, the task force agreed not to split the state information. The section will be reorganized to put the federal portion up front and all the state information next. Send the state portions to each representative for their revision via e-mail. A regulatory history for each state will be added. Sections 6 and 7 will then refer the reader back to section 5 for explanation when landings dropped/jumped, value dropped/jumped, etc. Each state representative will send S. VanderKooy this information. The Louisiana history is in the 1996 profile. H. Blanchet will get recent changes to GSMFC. The FMFC has this information on its ^{home} page. L. McEachron stated that Texas will have to do a search for this information. It will ^{take} some time. S. VanderKooy has the Mississippi history. Combine 5.3.1 and 5.3.2. Should we add the national standards to the text? Every state has the same sentence regarding the state CZM programs. Each state representative should expand this paragraph with a brief overview of their state program. The section will be sent to the GSMFC Law Enforcement Committee to review prior to publication.

Section 6 - Description of the Fishing Activities

- Multiple changes throughout the section, major rewrite, and information needed.
- Add that seatrout were fished for subsistence as evidenced in Indian middens.

- 6.1.1 B. Muller noted that MRFSS has been in place since 1979. Reedited and revalued in March 1996. In present form it goes back to 1981. B. Muller will rewrite a sentence to clarify MRFSS history.
- The history should reflect a philosophical change during the late 1970s early 1980s. People started to pay attention to the recreational sector. Prior to this time, the management regime was directed to commercial fisheries.
- Prior to the 1970s, general information was lacking. It was open access fishing. General information on the number of anglers and their catch was unavailable. Recreational regulations were often instituted to ~~assess~~^{monitor} the recreational sector. For example, salt water fishing licenses were not required in Mississippi until 1995.
- Add that Texas information is not MRFSS, and Texas has had their own creel survey since 197_. Mention head boat surveys, etc.
- Add something about the trend toward economic add ins.
- T. Waldrop asked where are Chandeleur Sound/Breton Sound landings? If MRFSS is missing this data, then the economic impact on Mississippi Gulf Coast is sadly lacking. This is one of the criticisms of the MRFSS survey. Louisiana now has licenses for those anglers.
- The numbers are gross estimates with wide brackets on both sides (over and under). We may only want to use total numbers from MRFSS and not split out by charter boat, etc. in state descriptions.
- L. McEachron will provide spreadsheets to generate figures for the Texas portion.
- 6.2.2.1 Need Florida information.
- 6.2.2.2 Need Alabama information.
- 6.2.2.3 Need Mississippi information
- 6.2.2.4 Need Louisiana information
- 6.2.2.5 Need Texas information.
- 6.3 Rewrite the second paragraph and look at the overall findings from the mortality papers. It just relates high mortality right now which is not always the case. Some studies showed low mortality. Note seasonality and handling during the mortality studies. Add Murphy 1995. Other mortality papers are needed from Alabama and Louisiana.
- 6.3.3 B. Muller will add this section.
- 6.3.4 B. Muller will add.
- 6.3.5 Entrainment studies are available. B. Muller will get information to S. VanderKooy. There are all kinds of power plant studies.
- 6.4 There is no foreign activity associated with this fishery.

Section 7 - Economic Characteristics of the Fishery

S. VanderKooy reported that since the last revision, C. Adams removed landings information from the section which will be applied to section 6. Value has remained in the section. C. Adams will be referring to changes in dockside values over time responding to changes in regulations

B. Ditton noted that this section focuses entirely on the commercial fishery. He suggested that the section be divided into two parts, commercial and recreational. The third paragraph on

page 1 begins with a discussion of value, but the majority of the paragraph discussed expenditure and economic impact. Replacement costs should be a separate paragraph.

He stated that the economics of spotted seatrout is that of a recreationally-sought species and suggested the focus of discussion should be in terms of expenditure, local and regional impact, and value. The sentence under 7.0, third paragraph. "Though not directly reflected in the market place, as are dockside value and exvessel prices [in other words, its not important], these values are no less important in providing..." should be turned around. Values expressed in the recreational fishery provide a better understanding of the total value derived from the recreational utilization of spotted seatrout stocks. The preceding sentence links dockside value and exvessel prices; they are irrelevant. The commercial sector does not have producer surplus which is the counterpart to this.

H. Blanchet noted that C. Adams was trying to show that there is a published value of dockside price. The general public is not as familiar with recreational value which is not as direct a measure.

B. Ditton noted the confusion occurs because the counterpart to exvessel prices on the commercial side is trip expenditures. Neither get you very far in allocation questions. Willingness to pay is the counterpart to producer surplus, and that is not available either. B. Ditton volunteered to redraft that paragraph.

H. Blanchet suggested to go back and point out that measures of value are very difficult to obtain. Those types of numbers that people normally see are not necessarily comparable, adequate, or the best information that is available.

On page 6, second paragraph, give the scientific name for *Cynoscion regalis* (weakfish). Sandtrout is not a preferred common name. Use either sand seatrout or silver seatrout. White trout is a local common name in Louisiana and Mississippi that describes both sand seatrout and silver seatrout. However, the remainder of the states do not use "white trout." Check to see which trout are referred to, *Cynoscion arenarius* (sand seatrout) or *Cynoscion nothus* (silver seatrout).

B. Ditton noted that page 7 begins with Maharaj and Carpenter, national information, and Gulf of Mexico information is next which is good. However, comprehensive studies measuring the total economic value associated with the harvest of spotted seatrout are not included. State-wide saltwater expenditures are discussed next. All expenditure and economic impact information should be included regardless of where it is done. Reorient to the following order: statewide saltwater expenditures, economic impact of expenditures, and, finally, value. Also, there may be a few other studies on marginal value that should be discussed here. Check Trellis Green's work in Mississippi.

Questions were raised by the group regarding the statement of page 7 which states, "Ditton and Hunt (1996) found that 18% of the marine recreational fisheries in Texas preferred to target spotted seatrout." Is that spotted seatrout only? In conjunction with other species such as trout and reds, the percent will actually be higher. These figures should be clarified if representative of those people who target spotted seatrout only. MRFSS Gulf-wide data show that spotted seatrout were caught by recreational fishermen more than any other single species. In Mississippi, 90% of recreational catch is spotted seatrout. B. Ditton noted to add the second and third choice preferences.

At the bottom of page 7, "Though not associated with spotted seatrout, willingness to pay for saltwater fishing trips range from..." H. Blanchet would like that sentence reworded to, "Although not completely or directly associated..." L. McEachron noted the Wellman and Nobel 1977 study, spotted seatrout is in the majority of the percentage. That gives a measure indicating anglers are spending money to go fish. B. Muller suggested adding "not solely" before "associated with spotted seatrout..."

S. VanderKooy asked if Milon, Thunberg et al. (1993) is one study. It is probably Milon et al. 1994. D. Shively noted that he will clarify the Texas citations with C. Adams. He actually sent two papers and did not distinguish a or b since they were both completed in the same year. Also the restitution values citation should be checked. It may have come directly out of the proclamation or revised after by the division. B. Muller noted that one was Sea Grant No. 73 and the other Sea Grant Report 212. They are Milon et al. 1993 and Milon et al. 1994.

H. Blanchet noted a correction on page 8, first line. The cite should be Bourgeois et al. 1996. Also in that paragraph, it is important to clarify that the Adkins (1990) survey was actually conducted in 1984. Add "...approximately 64% of Louisiana saltwater anglers in a 1984 survey." The Louisiana Wildlife and Fisheries Commission (1997) cite should be Holloway and Lavergne 1997.

B. Ditton suggested formatting the section as follows: preference information, states information, expenditure, economic impact, and finally value. H. Blanchet noted MRFSS survey information on preferences is summarized and shows how preference has changed over time. B. Ditton reiterated that people may be targeting different species than what their actual preference is.

Section 8 - Social and Cultural Framework of Domestic Fishermen and Their Communities

B. Ditton work is focused on the recreational sector, and he doubts you will get very much on ethnic characteristics. He will describe resource expectations and attitudes. The list of organizations are basically boilerplate, and he will check the states for additions. It would be nice to have information on tournaments and their infrastructure. S. VanderKooy will send the list of organizations and F. Deegan's paper from Mississippi. S. VanderKooy reported that he is actually drafting up a portion of the commercial sociology for the flounder FMP from existing literature.

Section 9 - Management Considerations

L. McEachron asked if there is one management unit. There are some very distinct clinal differences. It is a unit stock, but there are genetic differences from region to region. This portion really needs a statement such as although it is a single stock, there are certain genetic differences in the range.

B. Ditton noted that 9.4.1., first paragraph needs additional information indicating that the southeast is going to incur sharp population increases in the area which will have a spin-off effect and exacerbate problems. Forward projections from demographic trends should be discussed. People will have to lower their expectations and accept less. B. Ditton can provide a reference.

Delete 9.4.1 second paragraph.

H. Blanchet noted that recreational fishers thought that with the elimination of gill nets all the problems would go away. That is not true. The number of fish have basically stayed the same, but poundage per fish is going up. With time, the recreational fishing community has taken a higher portion of the harvest.

9.4.2 It is very hard to say the fishermen are happy as clams. Are the managers in the Gulf satisfied with bag limits? The lack of anglers attaining bag limits is something you will find in nearly all fisheries. Some more than others. Is it good or bad or irrelevant? There is a perceived problem here, but it has not been correctly conveyed.

9.4.6 The group agreed to pass on this section until after the habitat draft has been reviewed.

Section 10 - Potential Management Measures

Add a habitat enhancement section including mitigation, creation, and low profile shell reefs; a stock enhancement section, and an educational effort section. Have the TCC Habitat Subcommittee review 10.6.3, habitat monitoring.

Update on Status of the Stock Assessment

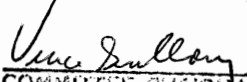
B. Muller began with a report on Florida's stock assessment. Florida SPR values are below 35. In the northwest SPR is in the middle 20s; in the southwest, SPR is in the high 20s. From the available data in each Gulf state, stock assessments will contain spawning biomass, recruitment, and spawning information. However, each stock assessment will be different, so he will describe differences in growth, maturity schedules, and general diversities (state regulations, etc.). Mississippi has provided information on commercial catch, commercial length, and an age-length key for females. The tuning index for a catch-at-age table is needed, and he would prefer sex-specific data. With this information, he can calculate a transitional SPR. B. Muller reported that he has not received any Alabama data yet. The stock assessments will not be incorporated because of their volume, but they will be referenced. Section 9 will contain a summary. Section 9 was distributed and includes a summary of the stock assessment thus far. When all data elements are received from the other states, he will add the information and update the section accordingly.

Next Meeting

The next meeting was tentatively scheduled for April. No specific location was requested by the group.

B. Muller moved to adjourn. The motion was seconded by B. Ditton. There being no further business, the meeting adjourned at 3:40 p.m.

APPROVED BY:


COMMITTEE CHAIRMAN

**Joint TCC Crab Subcommittee &
Blue Crab Technical Task Force (TTF)**
MINUTES
March 16, 1998
Destin, Florida

Chairman Vince Guillory called the meeting to order at 8:32 a.m. The following members and others were present:

Members

Vince Guillory, *Chairman*, LDWF, Baton Rouge, LA
Bruce Buckson, FDEP/DLE, Tallahassee, FL
Traci Floyd, MDMR, Biloxi, MS
Steve Heath, ADCNR/MRD, Dauphin Island, AL
Charles Moss, *proxy for Ed Holder*, Lake Jackson, TX
Butch Pellegrin, NMFS, Pascagoula, MS
Harriet Perry, GCRL, Ocean Springs, MS
John Petterson, IAI, La Jolla, CA
Phil Steele, FDEP/FMRI, St. Petersburg, FL
Tom Wagner, TPWD, Rockport, TX

Staff

Ron Lukens, Assistant Director, Ocean Springs, MS
Dave Donaldson, Program Coordinator, Ocean Springs, MS
Steve VanderKooy, Program Coordinator, Ocean Springs, MS
Jeff Rester, Program Coordinator, Ocean Springs, MS
Cindy Yocom, Staff Assistant, Ocean Springs, MS

Adoption of Agenda

P. Steele moved to adopt the agenda as present. S. Heath seconded the motion which passed without objection.

Adoption of Minutes

H. Perry noted a change to the Mississippi report in the October minutes, and T. Wagner noted a misspelled name on the conference call minutes. T. Wagner then moved to approve both minutes as revised. P. Steele seconded the motion which passed without objection.

Membership

Chairman Guillory explained that Paul Prejean has resigned from the task force due to his departure from state employment. Because of B. Pellegrin's work on the stock assessment, it was a logical step to invite him to join the task force. On behalf of the entire group, Chairman Guillory welcomed B. Pellegrin as an official member of the technical task force.

Mississippi's marine resource agency has asked that Traci Floyd be appointed to the subcommittee and technical task force. H. Perry moved to welcome Ms. Floyd to the group; P. Steele seconded the motion which passed unanimously.

If expertise is needed during the duration of FMP development, the Commission is allowed to recruit those disciplines. The Commission contracted with Dr. John Petterson's company (Impact Associates, Inc.) to perform a sociological survey and provide the sociological section. T. Wagner moved to officially add Dr. Peterson to the task force; S. Heath seconded the motion which was approved unanimously.

Geryonid Profile

H. Perry reported that the Council's Deep Water Committee discussed the fishery and was very receptive to the subcommittee's concerns. Unfortunately, the effort to look at this fishery as fishery management plan effort failed at the full Council level. However, the Council did ask the Commission to work with a Council representative to produce a biological profile that could be expanded into a FMP at a later date.

R. Lukens reported that the Council said there was merit to the group's concerns, but there are only two vessels fishing for these crabs in the Gulf of Mexico. Thus, FMP development would not be logical at this time. The data is lacking, and there is not enough information to develop an FMP. However, biological information is available on the species.

T. Wagner moved that Harriet Perry represent the Commission and work with the Council representative on the profile. B. Pellegrin seconded the motion which was approved by consensus. H. Perry noted that information on landings and working areas were needed from Florida. P. Steele will provide this information.

T. Wagner moved that Commission staff send a letter to the Council recommending Rob Erdman as the Council representative. Steve Otwell, University of Florida, is another possible candidate. The group unanimously agreed that the time frame to begin this effort should be after the FMP revision is completed. H. Perry seconded the motion which was approved without dissent.

Blue Crab Mortality Symposium

V. Guillory reported that the Crustacean Society has a meeting scheduled for the last week in May 1998 in Lafayette, Louisiana. The symposium cochair, Dr. Daryl Felder, has been contacted and welcomed a one-day mini symposium during that week. V. Guillory will receive all meeting notices. A work group consisting of Vince Guillory, Harriet Perry, and Traci Floyd was formed to organize and facilitate the symposium. Invited presenters need to be contacted well ahead of time. Information needs to be distributed well in advance of the symposium.

Invited speakers will present overviews. Ken Heck from Dauphin Island would be a good speaker. Mark Fisher (TX) may be interested in speaking. H. Perry will present on megalopal and juveniles. V. Guillory will also present. Mortality associated with fishing (commercial and

recreational) activities should be presented. Harriet will contact Ken Heck at the end of the month. Other causes of mortality (pesticides, chemical, etc) would be a good presentation. The Chesapeake group including Willard Van Engle, etc. will be invited. A tentative list of speakers will be generated. A general call for papers will be placed on both the GSMFC and Crustacean Society web pages. Guidelines to produce the proceedings need to be worked out. Papers must be submitted prior to the symposium as well as abstracts for a program.

H. Perry moved to proceed to the TCC with a request for symposium funding (\$3,500 - \$5,000) to include subcommittee travel to the meeting, travel for three invited speakers, meeting room costs (audio/visual), and the program printing. Funding to print the Proceedings was previously approved by the Commission. T. Wagner seconded the motion which was unanimously approved.

State Reports

Florida - P. Steele reported that Florida's landings of blue crab in 1996 were 18 million pounds. Preliminary reports for 1997 indicate 12 million pounds have been landed. There is a continuous petition in Florida to revise the degradable escape panel law. Five options are currently available, but every fisherman has their own idea.

In 1997, stone crab landings were average. That fishery is undergoing some industry-driven transition. T. Bert is monitoring stone crab settlement once per month through trap scraping in Tampa Bay. The numbers are down drastically. Florida's DNA project is being completed.

B. Buckson reported that South Florida has considerable problems with trap loss due to weather. The degradable panel issue will be before the Florida Marine Fisheries Commission this year. Options seem to be working well, but fishermen come up with more every day. Industry is pushing for a limited entry program for the stone crab fishery. Hearings are being held, and it will probably be another year before enactment. As reported at the last meeting, Florida was having a problem with crab traps being used as finfish traps. The problem has been solve by a rule change. It is illegal to use a crab trap in federal waters to trap finfish. Construction requirements are more specific. Vertical throats are not allowed in crab traps. Enforcement is notifying manufacturers of this rule.

B. Buckson inquired whether anyone has ever seen a wooden blue crab trap. They recently cited a fishermen in Crystal River for using a wooden trap (for blue crabs). He was cited for improper gear, but filed a motion to dismiss. Most of the group have never seen a wooden trap for blue crabs. A history of gear is included in the crab profile. GSMFC staff will send B. Buckson a copy.

Alabama - Blue crab landings in 1996 were 3 million pounds. Landings for 1997 have already exceeded that number. No new regulations have been passed so far. Additional regulations will come along, but the time line is uncertain. Effects of El Niño include trap loss, but no massive destruction is occurring. Ken Heck's study to repeat the larval settling was funded. This portion of the study will include filters for megalopal settling, and marsh settling will be counted. Percent

mortality is up to about 80%. Predation is being measured through tethering. They hope to be able to fund the project for several more years. Alabama's crab biologist position is still open.

Mississippi - A task force has been established and is looking at the fishery. A profile of Mississippi's fishery will be developed and recommendations will be made to address their severe problems. Settlement work is still continuing. Four sites were used in 1997, and there was no significant difference in settlement. This spring their traditional site and one additional site in the west will be used.

Shelf circulation and wind field data were different in 1996 than in the years preceding. In 1996, an eddy pinched off of the Loop Current that impinged on the shelf. Red tide (*G. breve*) occurred for the first time in the north central Gulf of Mexico in 1996.

Louisiana - V. Guillory reported that last year he and Harriet reviewed an outreach proposal which focused on the Chesapeake Bay area. The portion reviewed included Internet sites and brochures. Although funding fell through, they are proceeding with a publication on blue crabs ("the blue crab bible") which will be published in 2000. H. Perry expressed concern that the Gulf was totally left out of this process, and the publication does not address the Gulf of Mexico fishery. This document will be widely distributed but will present a narrow picture of the fishery. Unless the publishers state that the document is specific to the Atlantic fishery, it will not be a fully-functional treatise. The subcommittee agreed to volunteer their assistance to the authors, if the Gulf is allowed to participate. Chairman Guillory will contact the editor to offer assistance. T. Wagner suggested that specific counterpoints to their chapters should be presented.

In Louisiana, the 1997 fishery landed 44.3 million pounds. A total of 2,550 crab trap licenses were sold. This number is down from 1996 sales; however, licenses sold in 1996 were inflated due to the crab trap moratorium. The Louisiana Crab Task Force felt that there was too much effort in the fishery. The legislature failed to extend the moratorium which expires January 1999.

Also in January, the state's trip ticket system will be implemented. The program is in planning and different forms are being finalized. A few dealers will be selected for a pilot program. In January 1999, every dealer will be using the system. At the current time, dealers submit a monthly report. V. Guillory inquired if there was any opposition in Florida when their system went into effect. P. Steele indicated that the system will meet resistance at first. It may take up to 10 years to fully implement. He suggested the state make it as easy as possible for the fishermen. Most fishermen are concerned whether the information will be confidential. Keeping up with the data is a tremendous effort.

V. Guillory reported that the rough draft on the state's hard crab survey in 1995 is complete. A soft crab fishery survey was recently performed. They incorporated the approach from The Total Design Method. There are 155 sheddors in the state, and 71% responded. That is an excellent return for a survey.

Texas - T. Wagner reported that after three years of decline, 1996 landings were up at 6.3 million pounds. Landings for 1997 are down again at 5.7 million pounds. Value is down at \$3.7

million. Landings in 1996 showed a record price per pound at \$.85 per pound. Price per pound is also down in 1997. This continues a long-term gradual decline in landings with a three-year cycle, the third year showing higher landings.

Texas passed legislation in June 1997 to create a commercial crabbing license and implement license limitations for the fishery. A series of workshops have been held, and the department has worked with the area leaders of commercial harvesters, and they have been in support of limited entry. The new license and limitation program will go into effect in August 1998. License fees for residents will cost \$500. Non-resident licenses will cost \$2,000.

Limited entry elements include automatic eligibility for a commercial crab fishing license if the applicant held concurrently during September 1, 1995 through November 13, 1996 the following: one or more commercial crab trap tags, a general commercial fisherman's license, and a commercial boat license. Historical participants who do not meet one or more of these criteria will have the opportunity for review board appeals. After initial licensing, a person must purchase the license each year to remain in the program or they will lose their eligibility to purchase a license. The program is funded by setting aside at least 20% of the license fee into a special buyback account. The buyback program will begin no later than September 1, 2001, and licenses will be retired until reissue can be allowed.

Proposed legislation includes a trap marking system that will require a unique identification number on the commercial crabbing license plate that must be placed on each crab trap float in two-inch block letters of contrasting colors. The gear tag will be required to be attached to within six inches of the buoy. Every one is happy to do away with the trap tags which were fouling within two weeks.

Other proposed legislation includes two options for degradable panels for crab traps. Jute or sisal twine was not lasting two weeks. Option 1 would allow 20-gauge or smaller untreated steel wire to be used instead of jute or sisal twine as a loop for the lid tie down strap to be hooked to; or the material used to lace in place any obstruction placed over the rectangular cut-out opening; or the material woven over the rectangular cut-out opening. Option 2 would allow the use of a hinged "door" installed over the rectangular cut-out opening. The door opening meets the intent of a degradable panel.

Trap Bycatch Entanglement

P. Steele reported that incidents of manatees becoming entangled in blue crab trap lines is being investigated. It seems that the female manatees are rubbing on the lines (using the lines as a scratching post), and two per year are getting tangled. Fishing effort and number of traps are being looked at. He will keep the group updated.

Blue Crab FMP Revision Progress & Needs

Stock Assessment - B. Pellegrin presented a progress report on the stock assessment of Gulf of Mexico Blue Crab fishery. The following has been compiled so far:

- Regional data base for north-central Gulf of Mexico
- Annual commercial landings by state
- Annual indices of relative abundance by state
- Monthly indices of relative abundance by state
- Hypothetical mean age of Gulf of Mexico blue crab populations
- Von Bertalanffy growth equation
- Length based estimate of total mortality
- Width frequency histograms
- Annual estimates of total mortality by state
- Annual relative exploitation rates by state
- Annual absolute exploitation rates by state
- Mortality based surplus production model

Sociological Section - J. Petterson reported that the final survey design was completed last month and is ready for field testing. License information, and names and addresses have been obtained from each state. Fishermen will be asked to review/critique the survey and send in comments. These same experts will be used for the more in-depth protocol. The bulk of the analysis will be state-by-state and have a nice overview. A draft cover letter has been prepared, and any comments are welcome. Reminder postcards will be sent from the Gulf States office. The group agreed the letter would be from each state representative for the correlating state. S. VanderKooy noted that each state's director will have to approve the use of state letterhead for the survey. Permission will be asked at the S-FFMC meeting on Thursday. The group discussed whether the survey should be translated into Vietnamese. The committee had mixed thoughts, and the group deferred the decision to Dr. Petterson who agreed to drop translation due to multiple Asian groups. Dr. Petterson also requested names from the Vietnamese community to act as key informants. State representatives agreed to send out inquiries.

Economic Section - Walter Keithly had planned to be at the meeting but was not present. Chairman Guillory will contact him for a progress report.

Section Review and Needs - Revised sections were distributed. The following needs were addressed:

- P. Steele needs a description of state programs that protect or restore habitat. Each state representative was asked to look over state maps and tables. He considers the section about half complete and plans to add information on pollution, El Niño, etc.
- Chronological changes to regulations are being added to the other FMPs. Brief, state-by-state notations of changes from 1975 to 1997 will help describe fluctuations in landings. Mississippi, Louisiana, and Texas state representatives will compile this

information. B. Buckson will ask the law enforcement representatives about Florida and Alabama information.

- V. Guillory distributed a list of literature cited and requested H. Perry and P. Steele check off the publications that they have. Also, add any new or additional cites not listed.
- H. Perry will incorporate life stage illustrations. She requested the following information from each state for section 3:
 - smallest, average, and largest size
 - size at 50% and 100% sexual maturity
 - parasite information including seasonality, incidence of occurrence, size of infected animals

All comments should be made to section authors by April 15; May 1 at the latest. Revised drafts should be sent to the GSMFC office for distribution prior to the May meeting. The current FMP will be sent to task force members in absentia so they may make comments prior to April 15.

C. Moss, proxy for Ed Holder, provided the following comments from Ed Holder. C. Moss distributed written comments to V. Guillory for consideration.

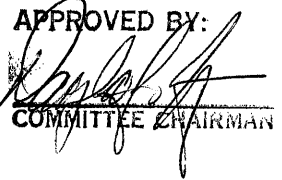
- There is not enough recreational information in the plan. The group did not disagree. All information known about the recreational sector is summarized in Section 6.
- Where are crabs lost to shrimp trawls addressed? Page 10.7.
- Marsh management projects (page 10.4), second paragraph should not imply that all weirs are bad — weir management and levees are an excellent way to promote migration. This paragraph is not talking about weirs alone. Weirs in conjunction with levees are being discussed.

May Task Force Meeting - S. VanderKooy and C. Yocom reported that the next meeting of the Blue Crab TTF has been scheduled from Wednesday through Saturday, May 26-30, 1998. The meeting will be held at the South Florida Regional Laboratory. Three, full days have been set aside for a line-by-line edit of the document. One day has been reserved for a field trip. A meeting notice and travel authorizations will be mailed once staff returns to the Commission office.

Other Business

V. Guillory reported on the status of the Baltimore symposium proceedings. Bob Jordan has been waiting for several papers that have still not been finalized and submitted. Steve Heath apologized and noted his paper was still out. If possible, he will get it done next week. If not, he will call Bob Jordan and request publication is not held up on his account.

There being no further business, C. Moss moved to adjourn. The motion was seconded by H. Perry. The meeting adjourned at 4:12 p.m.

APPROVED BY:

COMMITTEE CHAIRMAN

**TCC ANADROMOUS FISH SUBCOMMITTEE
MINUTES
Monday, March 16, 1998
Destin, Florida**

Chairman Frugé called the meeting to order at 8:30 a.m. The following members and guests were in attendance:

Members

Norman Boyd, TPWD, Port O'Connor, TX
Jim Duffy, ADCNR/MRD, Dauphin Island, AL
Doug Frugé, GCFCO/FWS, Ocean Springs, MS
Stewart Jacks, FWS, Corpus Christi, TX
Charles Mesing, FGFWFC, Midway, FL
Larry Nicholson, GCRL, Ocean Springs, MS
Daniel Roberts, FMRI/DEP, St. Petersburg, FL (*Proxy for Alan Huff*)
Howard Rogillio, LDWF, Lacombe, LA

Staff

Ron Lukens, Assistant Director, Ocean Springs, MS
Nancy Marcellus, Administrative Assistant, Ocean Springs, MS

Guests

Shawn Alam, FWS, Panama City, FL
Gail Carmody, FWS, Panama City, FL
Larry Lewis, Brown & Mitchell, Inc., Gulfport, MS
Frank Parauka, FWS, Panama City, FL

Adoption of Agenda

C. Mesing asked that the Subcommittee address a proposal entitled "Evaluation of the Heritability of Heteroplasmic Mitochondrial DNA Genotypes in A-C-F Striped Bass" submitted by Ike Wirgin under Other Business. **With that addition L. Nicholson made a motion to adopt the agenda. J. Duffy seconded. The motion passed.**

Approval of Minutes

The following changes were suggested for the September 29-30, 1997, minutes:

Page 2, **Report on 1997 Striped Bass Production and Distribution**, 2nd paragraph, 3rd sentence should read, "He indicated that there is legislative interest in coastal stream fisheries and the Department may be able to do some renovations at the Lyman hatchery that may double production."

Page 2, **Report on 1997 Striped Bass Production and Distribution**, 5th paragraph should read, "Mesing indicated that the 1s and the 2s are nothing more than a tag, and have nothing to do with performance. The Apalachicola River has the only source of naturally occurring 2s left in the Gulf region."

Page 7, **1998 Striped Bass Workshop**, 1st paragraph, 2nd sentence should read, "He and the GSMFC suggested to delay the workshop until after the first year of the stewardship program, because there would

be additional information and data available for review and the meeting would be more meaningful and productive.”

With those changes noted, C. Mesing made a motion to accept the minutes from the September 29-30, 1997 meeting. H. Rogillio seconded the motion and the minutes were approved.

State-Federal Reports

Alabama - J. Duffy reported that they have a marine hatchery in Gulf Shores, Alabama, which was basically built with 88-309 and anadromous money. They have put millions of fry and fingerlings in the Alabama systems. Over the years most were Atlantic fish from Monk's Corner and from other places. Our inland agency continues to stock inland waters all the way down to our primary bay system, Mobile Bay. They have even done some stocking in some coastal streams of both stripers and hybrids. We moved away from "striped bass restoration" in Alabama, but are continuing to stock. Our primary focus in the early 90s was analyzing a 15 year old tag return database that indicated that our catch of striped bass was largely a bycatch issue of our fall trout fishery. Some big stripers in Alabama, typically habitating the same areas, succumb to the same things that large trout do in the fall and winter. We found that our catch peaks coincided with our peaks in catches of trout in the fall. We began interviewing anglers to figure out just how many anglers there were in Alabama's small coastline area fishing for stripers. We found that probably no more than 100 people in the coastal area ever actually targeted striped bass. About the same time dedicated anadromous money through the Department of Commerce ended and our administrators were unwilling to expend Wallop-Breaux money in coastal areas where trout and red drum rule. Until we find some other source of money, I do not foresee Alabama putting Wallop-Breaux funds into new striped bass initiatives.

Florida - C. Mesing reported that they have been in cooperation with the Service to look at a five year plan to put 100,000 Phase 2 fish in the lower Apalachicola River. The first couple of years we didn't meet our goal, but the last couple have been successful. Each year has gotten better. Unfortunately, we are not seeing results in our creel survey that we would like to have. We may have a survival problem or lack of fishing effort. Fishing, in general, in the lower Apalachicola River is down considerably. We have to address that issue also. Our objectives has always been to try and maintain the Gulf race fish in the Apalachicola system through subsequent stocking and to try to provide a number of trophy fish for the anglers. This year we had another almost near record fish caught at 40 pounds below Jim Woodruff Dam. I would like to reiterate that we have quit using Wallop-Breaux dollars for striped bass in the State of Florida. That decision was made about 2 years ago. Things have changed in our agency and they may change again as far as our direction and our commitment. Recently, our new director has decided to retire March 27 so we will be getting a new director. I am not sure what that will bring and also there may be a referendum on the ballot this year in November that they merge game and fish freshwater fisheries with marine. The only thing I can say for certain is we are going to maintain our active role in the Stewardship Program, we will maintain broodfish collection in the system for the hatchery ponds as needed, we will continue monitoring the stocking success through our creel surveys, both in the upper and lower river, and we are going to look at the availability of cold water habitat through radio telemetry in the lower river to decide if there is sufficient water to support the stocking of fish.

Louisiana - H. Rogillio reported that Louisiana has stocked stripers since the late 1960s. They also have a new \$10 million hatchery in central Louisiana. The hatchery was built with disaster funds from Hurricane Andrew.

Mississippi - L. Nicholson reported that they are conducting a comparative rearing study between Gulf and Atlantic striped bass. This is the second year of the project. In 1996 they experienced a problem with swim bladder inflation. One thing that has been worked on very diligently in 1997 was to eliminate the swim bladder inflation problem. Basically they had a good 1997 culture and are happy with the results. Tag return results are premature at this time. So far, tag returns are not showing any difference between the two

rates of fish, even with the 1996 fish. The only differences are with fish that were stocked in heavily fished areas, more returns are being received. They are looking at it very closely and will continue to do so. Hopefully some definitive results between the two races of fish will be seen. Nicholson distributed several tables in reference to his culturing and harvesting.

Texas - N. Boyd stated that Texas continues to be nonparticipants in coastal striped bass stocking. He noted that they have seen a few more stripers and hybrids in creels and nets this past year due to the heavy rains.

U.S. Fish and Wildlife Service - F. Parauka asked if anyone was going to address the Alabama shad issue. Lukens indicated that Laura Jenkins had provided copies of a Alabama shad paper a couple of years ago. The Subcommittee discussed the issue at that time, but no action was taken. Parauka advised that he would send Lukens some more information. Frugé suggested that information be gathered and that the Alabama shad issue be placed on the agenda for the next meeting.

Frugé reported that his activities since the last meeting with regards to anadromous fish have been minimal. He continues with administration of the stewardship project. He will soon initiate a new contract with GSMFC under a Cooperative Agreement to transfer funding for fiscal year 1998 so that GSMFC can renew subcontracts with the project participants. Fiscal year 1998 budget numbers were received within the last month. The figure given was \$1,000 short of what they were supposed to award for the stewardship project, but he thinks it was an oversight and does not foresee a problem with that. The other thing he has been working on recently is analyzing Pascagoula River temperature data that was collected by the USGS under contract to the GSMFC which will be reported on in more detail later on the agenda. Frugé has also been maintaining coordination with Panama City with regard to stocking Gulf striped bass fingerlings, although Laura Jenkins is now doing most of that work.

Update on Pearl River Projects

H. Rogillio gave the Subcommittee a computer/visual presentation on the status of sturgeon work on the Pearl River. Four publications have been completed as a result of this work. Another presentation on the status of Gulf striped bass work was also given.

Pascagoula River Contaminants Study Report

Larry Lewis, with Brown & Mitchell, Incorporated, an engineering and environmental consulting firm from Gulfport, Mississippi, gave a presentation on the Pascagoula River Contaminants Study.

In January 1997 the GSMFC office issued a request for proposals to do a GIS project. Brown & Mitchell, Inc., submitted a proposal and were selected to do the project. The title of the project is the Gulf States Marine Fisheries GIS Project and the purpose of the project was to develop a GIS system and use that system to make decisions about fisheries issues in some of the coastal streams in south Mississippi. The project design was straight forward. Four tasks were agreed to: establish a study area based on watersheds; collect environmental datasets to establish a GIS database; construct an environmental model; and perform data analysis at the direction of the staff to put together information in map form so that targeted river systems could be looked at to understand what was happening in those river systems, and, maybe with the combination of environmental data plus fish stocking data and population data, begin to piece together some of the facts that might help to make better decisions in the future as to where fish are stocked and where to find them when sampling.

An outline of the project follows:

Study Area

- Watershed Boundaries
 - Pascagoula River
 - Lower Leaf River
 - Lower Chickasawhay
 - Black and Red Creeks
- Geographic Boundaries - 11 Counties
- Surface Area 3,953.12 Square Miles
- Surface Hydrology - 2,985.59 Miles

Database Sources

- Mississippi Automated Resources Information System (MARIS)
- NASA Commercial Remote Sensing Office - NSTL
- Mississippi Department of Environmental Quality (MSDEQ)
 - Office of Pollution Control
 - Office of Geology
 - Office of Land and Water Resources

Environmental Datasets

- Watershed Boundaries
- Soils
- Land use
- Surface Hydrology
- NPDES Point Source Discharges
- Other Potential Pollutant Points (i.e. CERCLA, RCRA, UST's)

Dataset Preparations

- Adjust to Coordinate System, Scale, and Map Project
- Sort
- Buffer and/or Reclassify

Pollution Potential Model

- Datasets Sorted by Pollution Potential
 - Point Source Pollution
 - Non-point Pollution
 - Physical Features
- Datasets Evaluated and Reclassified
- Datasets Merged
- Pollution Potential Evaluated

Land Use Data Set

- USGS 1:250,000
- NASA Aerial Photographs 1:20,000
- Land use Classifications Modified
- Reclassified for Pollution Potential

Soils Data Set

- NRCS Soil Survey by County (1:20,000)
- Soil Series for Each County Modified
- Reclassified for Pollution Potential

Point Source Data Set

Point Source Discharge Derived from EPA
Referenced to USGS 7.5 Minute Quadrangle (1:24,000)
Point Source Discharges Modified
River and Stream Buffers Applied
Reclassified for Pollution Potential

Pollution Potential Evaluation

Overlay ("Combine") Pollution Potential Datasets
Produce "Enhanced Image" for Selected Locations
Identify Areas of "Optimal Conditions"

Lewis reported that the project has been completed and they are in the process of developing the final report.

Frugé mentioned that the initial goal of this project was to get a georeferenced dataset of potential pollution sites in the Pascagoula River to help evaluate sites for striped bass.

Lukens suggested that a computer be set up at the next Subcommittee meeting to view the various ways the data can be displayed. He also mentioned that the Subcommittee may want to consider expanding this project to other river systems. This will be discussed at the next meeting.

Gulf Sturgeon Activities

F. Parauka discussed the cooperative agreement they have with North Carolina State University. Dwayne Fox, a Ph.D. student, is conducting a study to locate spawning habitat in the Choctawhatchee River. He located six spawning sites from the last of March to the first of April. A total of 13 females, and 7 males were tagged. Another part of the study is to determine where the fish go when they leave the river system. Sonic tracking was to be conducted from November through April. The project will continue for the next couple of months.

Gulf Striped Bass Data Base

Lukens discussed the handout which was in the folder. The top sheet is the table structure of the database and file format with the data elements. The following sheets are an actual printout of the information that we have Louisiana. It is just to give you a reference point when talking about the database. We really need to try to move this database into a GIS compatible database. What that means is, I would like to explore the idea of getting locations where striped bass are caught georeferenced, whether they are broodfish or fish being caught in some kind of a survey. Also would like to explore the possibility that when out surveying and you have differential GPS capability then collect that information also. So that is two issues. One is we need to start collecting latitude/longitude information if possible and then get the older files updated. The Subcommittee agreed to make this effort when collecting future samples.

Lukens also mentioned that currently there are two large holes in the database and that is for samples from Mississippi and Alabama.

Striped Bass Fishery Management Plan

Frugé mentioned that over the past year the Subcommittee has discussed the idea of updating the Striped Bass FMP. It makes sense to do this as a follow up to completion of the stewardship projects. Concurrently with the Gulf wide FMP there is also the Apalachicola-Chattahoochee-Flint plan which the Panama City office has worked on and developed in conjunction with the 3 state technical committee which

needs to be revised. It would be nice to have all of this coordinated on the same track so that one plan does not contradict the other. So we need to talk about strategy for doing this when the time comes. The stewardship projects are slated to go through the end of 1999.

Lukens added that the Striped Bass FMP was written and completed prior to the institution of the Commission's Interjurisdictional Fisheries Management Program. Thus, the FMP is not consistent with the format of other FMPs that the Commission has published. It does give us an opportunity to update the format and to update the content. Another issue is the FMPs that are slated to be either revised or developed are selected by the Commission's State-Federal Fisheries Management Committee. It is hard to predict what priority the S-FFMC would put on revising the Striped Bass FMP. At this time we should express our desires as a Subcommittee to begin to revise the Striped Bass FMP and get that into the decision making process.

L. Nicholson made a motion that the Anadromous Fish Subcommittee request that the Technical Coordinating Committee give approval to develop a Striped Bass FMP revision around the year 2000, and if approved by the TCC then forward the recommendation to the State-Federal Fisheries Management Committee to consider when setting their priorities. The motion was seconded by C. Mesing and unanimously approved.

Gulf Striped Bass Genetics Work

Lukens reported that work continues on a research project with Ike Wirgin entitled, "Development and Use of Striped Bass Microsatellite Nuclear DNA Sequences to Evaluate Introgression in the A-C-F System". The overall objective of this project is to determine the extent of introgression of Atlantic coast nuclear DNA in the Apalachicola-Chattahoochee-Flint River striped bass population.

Historically, many rivers along the Gulf of Mexico coast contained small populations of striped bass. Today, all of these are believed extirpated with the exception of that in the Apalachicola-Chattahoochee-Flint (A-C-F) river system. Genetic investigations were initiated to determine if striped bass in the A-C-F today exhibit unique DNA sequences that are not seen in striped bass from Atlantic coast populations. This would confirm that the A-C-F population is genetically distinct and would imply that its gene pool has not been compromised by the introduction of fish of Atlantic coast ancestry. Analysis of mitochondrial DNA (mtDNA) and several forms of nuclear DNA (nDNA) demonstrated that a high percentage of fish from the A-C-F still exhibit mtDNA and nDNA genotypes that are not seen in any Atlantic coast fish. Additionally, it was found that none of four other striped bass populations along the central Gulf coast contained fish with the diagnostic Gulf mtDNA and nDNA genotypes. Thus, the A-C-F may serve as the sole refuge for Gulf strain striped bass. Other results from the project include: development of striped bass microsatellite primers; evaluation of genetic variability at microsatellite loci in striped bass; and, evaluation of genetic variability at microsatellite loci in white bass.

Other benefits of this research:

- 1) Hypervariable loci were identified in striped bass and white bass that are individual-specific and can be used to track offspring of individual families that are used in performance evaluation tests in aquaculture facilities. These hypervariable tags allow the offspring of individual matings to be communally reared and yet still be identified as to familial origin.
- 2) Alleles at these hypervariable loci also provide additional genetic tags that can be used to track representatives of individual stockings made in the A-C-F or other Gulf coast rivers.
- 3) Additional genetic markers were found that aid in stock identification of the Hudson River and Chesapeake Bay striped bass.

Future plans are:

- 1) For the next several months, will continue to screen additional microsatellite loci to hopefully identify one more genetic marker that can be used to discriminate A-C-F from Atlantic coast fish.
- 2) It is essential that the heritability of variant alleles at DSB20 and at the second locus be evaluated to ensure that transmission conforms to Mendelian expectations. We will screen A-C-F broodstock this spring at these loci and evaluate genotypes in 20 offspring from each of several crosses in which the parents exhibit differing genotypes.
- 3) We will then screen our archived A-C-F samples to determine the frequencies of diagnostic alleles at DSB 20 and the second polymorphic microsatellite locus. Allelic frequencies at these loci will then be compared between archived and extant A-C-F samples. This data will allow to statistically evaluate whether significant introgression of Atlantic coast nDNA alleles has occurred in the A-C-F system.

Lukens reported that this is a three year project and it is currently in its second year. He also mentioned that Wirgin would make a presentation to the Subcommittee when the project is completed.

Florida Sturgeon Aquaculture Plan

Dan Roberts, proxy for Alan Huff, updated the Subcommittee on the Sturgeon Production Work which was established by the 1996 Florida Legislature. In one year the group has met four times and gathered information pertaining to the feasibility of commercial sturgeon production. It is in the State of Florida's economic and environmental interest to facilitate the commercial production and stock enhancement of its native sturgeon species via aquaculture. As an alternative agricultural crop, sturgeon is a very attractive species. Sturgeon is considered a high value product (e.g. fresh and smoked meat and caviar) both domestically and internationally. The commercialization of the species will provide a new industry and the creation of new jobs. Aquaculture provides a means for understanding the basic biology of the species, information which is desperately needed for both commercial production and conservation of our wild native populations.

In order to protect the species in the wild and promote their commercial production, the Working Group made the following four recommendations:

- 1) In the best interest for recovery, protection, and commercialization of the listed native species in question (Gulf of Mexico and shortnose sturgeon) it is strongly recommended that Florida's scientists working on both replenishment and commercialization form partnerships with scientists from appropriate Federal agencies.
- 2) The State of Florida facilitate authorization for private interests to culture both the Gulf and shortnose sturgeons for commercial purposes. There is no reason that such authorization should not be granted any later than 1 July 1998; however, present interpretations of Federal and State regulations have prevented aquaculture of Florida's native sturgeon species.
- 3) The Department of Environmental Protection and Florida Game and Freshwater Fish Commission form a partnership with the U.S. Fish and Wildlife Service and the National Marine Fisheries Service to initiate an experimental stocking program to replenish extirpated populations of Gulf of Mexico and shortnose sturgeon species.
- 4) The Sturgeon Working Group be maintained and meet a minimum of twice a year.

The Sturgeon Production Working Group's report, in accordance with Legislative Mandate (Chapter 370.31, F.S.), was completed in October and sent to Florida's Governor, Legislature, and cabinet.

Pascagoula River Temperature Study Report

The U.S. Geological Survey (USGS), Water Resources Division Office, located in Pearl, Mississippi, conducted a water quality survey of the Pascagoula River and two of its major tributaries, the Leaf and Chickasawhay rivers, under contract to the GSMFC during the summer of 1997. Sampling took place August 19-20 and September 10-12.

Frugé compiled a preliminary data summary which was distributed to the Subcommittee. A total of 402 data collection points were obtained during the August survey, and 400 data collection points during the September survey at 95 sites. Sampling occurred on average every 1.5 river miles. A collection point consisted of a recording of depth, temperature, dissolved oxygen (DO), pH, and specific conductance at each site from surface to bottom, at approximately five-foot depth intervals. Barometric pressure at each site was also recorded. Water quality data were obtained with a Hydrolab Surveyor, and latitude and longitude were recorded through global positioning system (GPS) technology. Data were provided by the USGS to the GSMFC in ArView geographic information system as well as Microsoft Excel Spreadsheet format.

Status of Navigation Project

Frugé reported that there are basically two issues, one is the navigation project and the other is a water diversion project. The navigation project appears to be dead for now. There was a lawsuit and the court found that the biological opinion that had been developed by the Fish and Wildlife Service and the Corps record of decision on their project based on that biological opinion were in error and that the Service and the Corp needed to go back to the drawing board, which they did. The new biological opinion was developed and the court found that the concerns that had been raised had been addressed so the new biological opinion was approved. The Corps has not yet issued a new record of decision on the project and it is not certain if they will. Without that record of decision there is basically no way for the project to move forward. There is a deadline coming up this year by which work on the project would have to commence for the project to still be authorized as a maintenance project. Right now it appears doubtful that they could get started in time for the work to be done as maintenance. If it is not done in time, they would have to go back to Congress and get new authorization for the project.

The other project is the water diversion at a place called Walkiah Bluff on the river. This is basically a water allocation or water flow kind of conflict that has developed between Louisiana and Mississippi. The east Pearl forms the border between Mississippi and Louisiana. Over time the east Pearl has started to sediment in so it doesn't get as much flow anymore, especially during low water season. The States of Louisiana and Mississippi finally worked out an agreement and got the Corps to plan and get authority to put in a low water sill at Walkiah Bluff and also do some maintenance dredging. This would restore flow to the east Pearl and allow small craft navigation during low water season. The low water sill that they would be putting in should have enough freeboard, even at low water, so that fish should be able to pass over it. They plan to start work on the project this summer and the work should take no more than a couple of weeks to complete.

Gulf Striped Bass Workshop

The FWS, through the Federal Aid Program, provided \$10,000 to the GSMFC to organize and hold a workshop on Gulf striped bass.

At the Tara Subcommittee meeting the workshop format was modified. Plans were made for the workshop to be primarily informational in nature and focus on two areas:

- 1) The first is to have each participant in the Fisheries Stewardship Initiative project provide a briefing on results of their activities through the summer of 1998.

- 2) The second will be to have a management-level representative from each state agency with interests in Gulf striped bass restoration provide a brief summary on their agency's position on and goals with respect to striped bass restoration.

Lukens indicated that it may be premature to have management-level representatives attend a workshop at this time since the stewardship projects will only be about a year along and there will be information pending that may impact management implications.

After much discussion the Subcommittee agreed to give Frugé and Lukens the flexibility to set up the workshop. The time frame will be around the first week of November 1998 in a central location.

As a result of this workshop, it may be possible to put together a summary of promotional materials to pitch to the State Directors.

Gulf Striped Bass Production for 1997

Due to time constraints this agenda item was not discussed; however, F. Parauka distributed a handout to the Subcommittee entitled, "Gulf Striped Bass Fry Distribution 1997."

There being no further business, the meeting adjourned at 5:13 p.m.

SEAMAP SUBCOMMITTEE MEETING
MINUTES
Monday, March 16, 1998
Destin, FL

APPROVED BY:

Richard Waller
COMMITTEE CHAIRMAN
8/17/98

Chairman Richard Waller called the meeting to order at 1:15 p.m. The following members and others were present:

Members:

Richard Waller, USM/IMS/GCRL, Ocean Springs, MS
Mark Leiby, FDEP/FMRI, St. Petersburg, FL
Steven Atran (proxy for Rick Leard), GMFMC, Tampa, FL
Steve Heath, ADCNR/MRD, Dauphin Island, AL
Jim Hanifen, LDWF, Baton Rouge, LA

Others:

Scott Nichols, NMFS, Pascagoula, MS
Ken Savastano, NMFS, SSC, MS
Michelle Kasprzak, LDWF, Baton Rouge, LA
Skip Lazauski, ADCNR/MRD, Gulf Shores, AL

Staff:

Larry Simpson, GSMFC, Ocean Springs, MS
Ron Lukens, GSMFC, Ocean Springs, MS
Dave Donaldson, GSMFC, Ocean Springs, MS
Jeff Rester, GSMFC, Ocean Springs, MS
Cheryl Noble, GSMFC, Ocean Springs, MS

Terry Cody's flight was canceled so he will not attend this meeting and he gave his proxy to R. Waller. Also, Chairman Waller read Perry Thompson's resignation letter from the Environmental Data Work Group. Rob Ford will replace him as the NMFS representative on the Work Group.

Adoption of Agenda

* Under "Other Business" add Florida's Contribution to the Spring Plankton Survey; under "Data Coordinating Work Group Report," J. Hanifen will discuss data availability and uses of data; and under "Other Business" Scott Nichols will discuss reef fish. **With these changes, J. Hanifen moved to accept the agenda, S. Heath seconded it and it passed unanimously.**

Approval of Minutes (10/13/97)

* **J. Hanifen moved to approve the minutes as written.** S. Heath seconded it and it passed unanimously.

Administrative Report

The Spring Plankton Survey will be conducted in April/May of this year. The survey will cover Gulf waters from Florida Bay to Brownsville, Texas. Vessels from Florida and NMFS are scheduled to participate in this survey but Florida may not be able to participate - this will be discussed under "Other Business." The purpose of the survey is to assess abundance of Bluefin Tuna eggs and larvae in the Gulf of Mexico.

The Summer Shrimp/Groundfish Survey is scheduled for June/July of this year. Vessels from NMFS, Louisiana, Mississippi, Alabama and Texas will participate in the survey. The purpose of the survey is to determine abundance and distribution of demersal organisms in the Gulf of Mexico. The real-time data distribution is also a part of this survey.

The 1998 Marine Directory and the FY97 Joint Annual Report have been completed and distributed. The 1994 and 1995 Atlases have been completed and distributed and the 1996 Atlas will go to the printer by the end of this month and will be distributed as soon as it is received. D. Donaldson asked that everyone get their data to Ken for the 1997 Atlas so it can be processed and then the atlas will be only one year behind which has been the goal for the Subcommittee.

In February the Louisiana and Mississippi Chapters of the American Fisheries Society had a meeting and D. Donaldson gave a presentation on SEAMAP. He developed a slide presentation which will be discussed under the next agenda item.

After the last meeting, representatives from Mississippi and Texas went to a training session at K. Savastano's office to log on to the system and to query the data. After this meeting, Florida and Alabama representatives will go for the same type training session. Louisiana and GSMFC representatives will schedule a session for later this year.

The 1999 preliminary budget is out and SEAMAP has again been level funded but D. Donaldson said work is in progress to try to get an increase.

Discussion of Generic SEAMAP Presentation

D. Donaldson brought to everyone's attention the generic slide presentation he developed that gives a basic overview of the program. The presentation is in Harvard Graphics and it can be used with the "In-focus" projector or as a regular slide presentation. The Subcommittee decided to send updated slides/pictures to D. Donaldson (by April 3) to incorporate into the presentation. This presentation focuses on the Gulf but he will send a copy of the presentation to the South Atlantic and Caribbean to show them what has been developed if they would want to use it as a template. The Subcommittee asked D. Donaldson to have the final presentation ready for the August meeting and to give the presentation to all three components for their information.

Discussion Concerning Real-time Survey and Pulse Fishing

The Subcommittee reviewed Public Testimony from the Texas Shrimp Association (ATTACHMENT I) to the GMFMC concerning the Texas Closure and pulse fishing related to the real-time data distribution. The GMFMC did not take action or have a major discussion on the testimony. After discussion, the Subcommittee decided the real-time data are very useful and

valuable information and is not only being used for shrimp management but also in regards to the hypoxia issue, and the mail-outs will continue.

Work Group Reports

- a. **Data Coordinating** - K. Savastano submitted the DCWG report (ATTACHMENT II) and reviewed each item. He stated the processing of the 1996 data are complete with the exception of the Caribbean data; processing of the 1997 data are in progress and the 1982-1987 Gulf data are in progress. Two one-day workshops for SEAMAP data base access have been completed and more are planned; processing of the 1996 Atlas is complete and processing of the 1997 Atlas will begin upon the completion of acquisition/edition of all of the 1997 data; re-engineering of the main frame SEAMAP software is in progress and development work is being performed on the SGI work station in Pascagoula. Integration testing between the PC and main frame was completed in January and integration testing for an entire year (1996) of data was initiated in February. He briefly explained how the new system works and what type queries can be done. 216 requests have been received and all have been completed; work is being done on re-engineering the system for the new software and is expected to be completed by March 1998; the on-line data base now contains 392 cruises with a total of 2,608,684 records.

The Subcommittee discussed several ways to make SEAMAP data access easier to the general public. People now realize the SEAMAP data are there and there are several current issues where SEAMAP data and other historical data will be useful. D. Donaldson will investigate putting the data on a server and eventually having the SEAMAP data available on a web page.

The Subcommittee then discussed SEAMAP data use. R. Waller and J. Hanifen told the Subcommittee of a recent Hypoxia Workshop held in Baton Rouge where a Duke University researcher was using SEAMAP data in hypoxia investigations; the data being presented were from NMFS vessels, only. Similarly, the red snapper assessment used only NMFS data for the juvenile abundance index, and the document contained references to lack of comparability and calibration between state and NMFS vessels. S. Nichols was asked if he would clarify these issues, especially since the Subcommittee was under the impression after B. Pellegrin's presentation of comparative tow data in March 1997 that inter-vessel calibration issues had been laid to rest. S. Nichols stated that that was only one experiment that came to that conclusion but others show there is still a trawl calibration problem and you can not pick the one experiment you want to use. He also stated that more analytical work needs to be done in terms of setting calibration but NMFS does not have the fiscal resources to do this and the states need to find a way to do this. After discussion, the Subcommittee decided to have an ad hoc work group meeting consisting of R. Waller, J. Hanifen, S. Nichols, B. Pellegrin, A. Shaw, M. Van Hoose and D. Donaldson to discuss the state/federal comparability issues. The group needs to define the scope of the problem and to decide what resources will be needed to resolve this problem. The meeting will be April 7th at GCRL and a report will be presented to the Subcommittee at the next meeting.

b. Environmental Data Work Group

M. Kasprzak reviewed the summary of the conference call on February 19, 1998 (Attachment III) which addressed the charge from the Subcommittee to examine the quality of environmental data sets and historical uses of the data, and to develop recommendations for future acquisition that will meet the needs of data users and resource managers. Also, M. Kasprzak was elected Work Group Leader and Rob Ford replaced Perry Thompson as the NMFS representative. The Work Group and a representative from Texas will meet April 28-29 in New Orleans to discuss the issues and then report their conclusions to the Subcommittee at the next meeting.

Also, J. Hanifen said that the Work Group is in the process of developing a QA/QC manual for the environmental data and asked if the Subcommittee should consider doing this for all of the data sets. K. Savastano said they have initiated documentation on the edit program for all of the data sets but it will take some time to complete. The Subcommittee decided that this was a good idea and will continue to pursue it.

Other Business

J. Shultz stated she is concerned with Florida's contribution to the Spring Plankton Survey being so late because technically it will not be spring. M. Leiby said the problem is that they no longer have a vessel and that is the only time-frame they could get. After discussion, M. Leiby along with J. Shultz and R. Waller will investigate the possibility of chartering another vessel and will inform the Subcommittee of their progress.

S. Nichols informed the Subcommittee that the vessel they usually use for the reef fish survey will be used instead for mammals. He is checking on several possibilities including chartering another vessel and will inform the Subcommittee if they will be able to do the survey.

There being no further business, the meeting adjourned at 4:40 p.m.



Texas Shrimp Association

P.O. Box 1020 • 126 West Cleveland • Aransas Pass, Texas 78735
Telephone (512) 758-5024 • FAX (512) 758-5853

January 21, 1998

Gulf of Mexico Fishery Management Council
Marriott Grand Hotel
Point Clear, Alabama

Public Testimony: Texas Closure

Mr. Chairman members of the Council, I am Wilma Anderson, Executive Director of the Texas Shrimp Association.

Our association is managed by a Board of Directors from the fishing ports along the Texas coast. This board sets standards and policy through majority rule. On the Texas Closure there were directors that supported a 9 Mile Closure, 15 Mile Closure and 200 Mile Closure. It was through the majority rule, that I was instructed to advise the Shrimp Advisory Panel and the Gulf of Mexico Fishery Management Council, that Texas Shrimp Association was not in support of a continued 200 Mile Closure for 1998.

Bases to not support a 200 Mile Closure for 1998:

It is the directors consensus that cooperation from other gulf states to provide similar conservation measures have never developed over the years, yet those state vessels receive benefits from the Texas closure. Nor has the shrimp fishery been afforded any credit for sea turtle protection or bycatch reduction resulting from the Texas 200 Mile Closure. The Texas coast experiences high numbers of out-of-state vessels at the of opening of Texas waters, and experiences tremendous outcry from the environmental sector demanding a shut-down of Texas waters because of high sea turtle strandings relaid to pulse fishing. We are also experiencing

safety hazards in vessel concentrated areas, as 'rules of the road' are being ignored in the rush for the shrimp dollars badly needed by the shrimp fishermen to offset shrimp loss incurred by TEDs.

1998 Recommendation:

Texas Shrimp Association recommends that a 15 Mile Closure be implemented for 1998. We further recommend, that only a production forecast for 1998 be distributed to the public, and that all seemap data collected be withheld from distribution until after the opening of the Texas waters. It is our opinion, that a 15 Mile Closure still provides sea turtle protection, bycatch reduction, and the withholding of seemap data until after the opening will eliminate vessel concentrated areas which will alleviate some pulse fishing problems and safety hazards to the fishermen .

March 11, 1998

SEAMAP DATA MANAGEMENT

A. Data Processing Status

Status reports for the 1982 through 1997 SEAMAP data are shown in Attachments 1-11. 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 1996 data is complete with the exception of the Caribbean data. Data processing of the 1997 data and 1982-1987 Gulf data is in progress. Two one day workshops for SEAMAP data base access have been completed and more are planned.

B. Gulf Atlas Processing

Processing of the 1996 Atlas is complete. Processing of the 1997 Atlas will begin upon the completion of acquisition/editing of all the 1997 data.

C. Data Requests

Two hundred and sixteen SEAMAP requests have been received to date. All requests have been completed. Six requests were filled since October 1997.

D. Software/System Progress

Re-engineering the main frame SEAMAP software in order to take advantage of the ORACLE data base software is currently in progress. The development work is being performed on the SGI work station in Pascagoula. Integration testing between the p.c. and main frame software for five cruise of test data was completed in January 1998. Integration testing for an entire year (1996) of data was initiated in February 1998.

E. On-line Data Base Status

Status of the SEAMAP data as of October 13, 1997 is shown in Attachment 12. The SEAMAP on-line data base had 375 cruises with a total of 2,498,051 records (approximately 99.3 megabytes of data). Since October 1997, seventeen cruises were processed through version 3.3 and added to the on-line data base as shown in Attachment 13. The SEAMAP on-line data base now contains 392 cruises with a total of 2,608,684 records (approximately 103.8 megabytes of data).



Kenneth Savastano
Data Manager

ATTACHMENT 1

SEAMAP 1982

DATA SOURCE	VESSEL	CRUISE	INVENTOR STATUS	BIOLOGICAL STATION	SPECIES	ENVIRONMENTA	GENERAL L/F	SHRIMP L/F STATION	L/F MERISTICS	STATIO	ICHTHYOPLANKTON SAMPLE	SPECIES	L/F	TOTAL	SEAMAP VERSION	DATE DBASED
AL	23	821	CRUISE 821	3	13	11	86	11	*1	*1	*1	*1	*1	121	3.0	17-Jun-94
MS	17	821	CRUISE 821	3	21	21	415	20	1365	*1	*1	*1	*1	1842	3.2	18-Apr-96
TOTAL					34	32	501	31	1365					1963		

SEAMAP 1983

DATA SOURCE	VESSEL	CRUISE	INVENTOR STATUS	BIOLOGICAL STATION	SPECIES	ENVIRONMENTA	GENERAL L/F	SHRIMP L/F STATION	L/F MERISTICS	STATIO	ICHTHYOPLANKTON SAMPLE	SPECIES	L/F	TOTAL	SEAMAP VERSION	DATE DBASED
AL	23	831	CRUISE 831	3	18	18	217	18	*1	*1	*1	*1	*1	271	3.0	27-Jun-94
MS	17	831	CRUISE 831	3	26	14	385	14	*1	14	832	*1	12	1320	3.2	18-Apr-96
US	4	135	SUMMER SEAMAP	3	263	195	4343	248	*1	*1	*1	*1	57	5211	3.3	09-Jul-97
TOTAL					307	227	4945	280		14	832		69	6802		

SEAMAP 1984

DATA SOURCE	VESSEL	CRUISE	INVENTOR STATUS	BIOLOGICAL STATION	SPECIES	ENVIRONMENTA	GENERAL L/F	SHRIMP L/F STATION	L/F MERISTICS	STATIO	ICHTHYOPLANKTON SAMPLE	SPECIES	L/F	TOTAL	SEAMAP VERSION	DATE DBASED
AL	23	841	CRUISE 841	3	10	10	120	10	613	*1	*1	*1	*1	763	3.0	27-Jun-94
MS	17	841	SUMMER SEAMAP	3	24	24	357	24	*1	6	165	*1	*1	600	3.2	17-Aug-95
MS	17	842	ICHTHYOPLANKTON SURVEY	3	10	*1	*1	*1	*1	*1	10	30		40	3.1	25-Jul-95
US	4	145	SUMMER SEAMAP	3	289	220	5566	259	11816	186	5093	*1	88	23663	3.1	04-Dec-96
TOTAL					333	254	6073	293	12429	192	5258		78	25066		

SEAMAP 1985

DATA SOURCE	VESSEL	CRUISE	INVENTOR STATUS	BIOLOGICAL STATION	SPECIES	ENVIRONMENTA	GENERAL L/F	SHRIMP L/F STATION	L/F MERISTICS	STATIO	ICHTHYOPLANKTON SAMPLE	SPECIES	L/F	TOTAL	SEAMAP VERSION	DATE DBASED
AL	23	851	SUMMER SEAMAP	3	20	18	286	20	*1	5	68	*1	2	421	3.0	22-Oct-93
AL	23	852	FALL SEAMAP	3	11	11	226	10	237	6	22	*1	*1	523	3.0	22-Oct-93
MS	17	851	SUMMER SEAMAP	3	36	31	754	31	*1	27	474	*1	5	1368	3.1	23-Feb-95
MS	17	852	FALL SEAMAP	3	80	40	893	40	1839	*1	*1	*1	20	2932	3.1	05-May-95
MS	17	853	WINTER SEAMAP	3	42	40	960	42	2752	40	1327	*1	2	5209	3.1	13-Jun-95
MS	17	854	FALL SEAMAP	3	16	15	290	15	785	*1	*1	*1	5	1136	3.1	19-May-95
US	4	153	SUMMER SEAMAP	3	355	317	6737	191	5226	292	15972	*1	38	29202	3.2	28-May-96
US	4	156	FALL SEAMAP	3	411	407	9261	322	18609	188	5281	*1	2	35464	3.2	15-Sep-95
TOTAL					951	879	19407	671	30448	558	23124		74	76255		

STATUS CODES:

*1 NOT TAKEN
 2 ENTERED IN P.C.
 3 ENTERED ON MIAMI UNISYS A10 SYSTEM(VERIFIED AND DATA BASED)

ATTACHMENT

SEAMAP 1986

DATA			INVENTOR	BIOLOGICAL	ENVIRONMENTA	GENERAL L/F	SHRIMP L/F	ICHTHYOPLANKTON			TOTAL	SEAMAP	DATE					
SOURC	VESSEL	CRUISE	STATUS	STATION	SPECIES		STATION	L/F	MERISTICS	STATIO	SAMPLE	SPECIES	L/F	VERSION	DBASED			
AL	23	861	SUMMER SEAMAP	3	13	12	210	13	*1	11	76	*1	1	3	338	3.0	13-Oct-93	
AL	23	862	FALL SEAMAP	3	16	*1	*1	16	*1	*1	*1	*1	16	32	64	3.0	28-Oct-93	
AL	23	863	FALL SEAMAP	3	6	6	123	6	44	*1	*1	*1	*1	*1	185	3.0	13-Oct-93	
MS	17	861	BUTTERFISH	3	51	38	817	15	*1	*1	*1	*1	16	46	967	3.1	14-Sep-94	
MS	17	862	SUMMER SEAMAP	3	20	14	378	18	833	12	233	*1	6	18	1526	3.1	11-Jan-95	
MS	17	863	SUMMER SEAMAP	3	14	14	412	12	624	13	165	*1	*1	*1	1254	3.1	17-Jan-95	
MS	17	864	FALL ICHTHYOPLANKTON	3	9	*1	*1	9	*1	*1	*1	*1	9	27	45	3.1	17-Jan-95	
MS	17	865	FALL SEAMAP	3	18	18	327	18	*1	*1	*1	*1	*1	*1	381	3.1	11-Jan-95	
SC	51	861	FALL SEAMAP	3	68	68	1641	68	16326	*1	*1	*1	*1	*1	18171	2.02	03-Feb-93	
SC	51	862	WINTER SEAMAP	3	44	22	532	44	2683	*1	*1	*1	*1	*1	3325	2.02	03-Feb-93	
SC	51	863	FALL SEAMAP	3	70	70	1792	70	9865	*1	*1	*1	*1	*1	11867	2.02	03-Feb-93	
US	4	160	SUMMER SHRIMP/GROUNDFISH	3	214	165	4114	159	4885	128	4574	*1	43	129	14368	3.1	05-Dec-94	
US	4	161	FALL ICHTHYOPLANKTON	3	128	*1	*1	119	*1	*1	*1	*1	91	273	520	3.0	04-Mar-94	
US	4	163	FALL SHRIMP/GROUNDFISH	3	308	305	6025	300	19008	*1	*1	*1	64	192	26136	3.1	26-Oct-94	
TOTAL					977	732	16371	867	54268	164	5048		246	720		79147		

SEAMAP 1987

DATA			INVENTOR	BIOLOGICAL	ENVIRONMENTA	GENERAL L/F	SHRIMP L/F	ICHTHYOPLANKTON			TOTAL	SEAMAP	DATE					
SOURC	VESSEL	CRUISE	STATUS	STATION	SPECIES		STATION	L/F	MERISTICS	STATIO	SAMPLE	SPECIES	L/F	VERSION	DBASED			
AL	23	871	SUMMER SEAMAP	3	1	1	31	*1	*1	*1	*1	*1	*1	*1	33	3.0	26-Jul-93	
AL	23	872	SUMMER SEAMAP	3	12	12	124	12	*1	3	4	*1	*1	*1	167	3.0	08-Oct-93	
AL	23	873	FALL ICHTHYOPLANKTON	3	10	*1	*1	10	*1	*1	*1	*1	10	10	30	3.0	08-Oct-93	
AL	23	874	FALL SEAMAP	3	5	5	42	*1	*1	*1	*1	*1	*1	*1	52	3.0	08-Sep-93	
AL	23	875	FALL SEAMAP	3	8	8	45	8	*1	*1	*1	*1	*1	*1	69	3.0	08-Oct-93	
LA	35	871	SPRING SEAMAP	3	16	16	332	16	4202	*1	*1	*1	14	32	4614	3.3	15-Oct-97	
MS	17	871	BUTTERFISH CRUISE	3	53	53	1349	*1	4310	*1	*1	*1	*1	*1	5785	3.0	04-Aug-93	
MS	17	872	SUMMER SEAMAP	3	78	68	1979	70	3827	41	807	*1	8	24	6892	3.0	08-Dec-93	
MS	17	873	FALL ICHTHYOPLANKTON	3	19	*1	*1	19	*1	*1	*1	*1	19	42	80	3.0	08-Jul-93	
MS	17	874	FALL SEAMAP	3	22	18	488	18	593	*1	*1	*1	4	9	1148	3.0	16-Jul-93	
SC	51	871	SPRING SEAMAP	3	52	52	2065	52	7455	*1	*1	*1	*1	*1	9678	2.02	15-Jan-93	
SC	51	872	SUMMER SEAMAP	3	52	52	2018	52	6919	*1	*1	*1	*1	*1	9093	2.02	19-Jan-93	
SC	51	873	FALL SEAMAP	3	52	52	1811	52	4847	*1	*1	*1	*1	*1	6814	2.02	15-Jan-93	
SC	51	874	FALL SEAMAP	3	54	54	2213	54	5269	*1	*1	*1	*1	*1	7844	2.02	15-Jan-93	
SC	51	875	WINTER SEAMAP	3	52	52	2075	52	5455	*1	*1	*1	*1	*1	7686	2.02	19-Jan-93	
US	4	167	SEAMAP SUMMER SHRIMP/GROUNDFI	3	509	483	9063	240	58315	308	7008	*1	44	131	78037	3.0	10-Nov-94	
US	4	168	FALL ICHTHYOPLANKTON	3	91	*1	*1	91	*1	*1	*1	*1	91	273	455	3.0	18-Feb-94	
US	4	171	SEAMAP FALL SHRIMP/GROUNDFISH	3	359	350	7968	163	35358	*1	*1	*1	24	72	44270	3.0	06-May-94	
TOTAL					1443	1256	31603	809	136550	352	7819		214	593		180525		

STATUS CODES

- *1 NOT TAKEN
- 2 ENTERED IN P.C.
- 3 ENTERED ON MIAMI UNISYS A10 SYSTEM(VERIFIED AND DATA BASED)

-25-

ATTACHMENT 3

SEAMAP 1988

DATA SOURC	VESSEL	CRUISE	INVENTOR STATUS	BIOLOGICAL STATION	SPECIES	ENVIRONMENTA	GENERAL L/F	SHRIMP L/F STATION	L/F MERISTICS	ICHTHYOPLANKTON STATIO	SAMPLE	SPECIES	L/F	TOTAL	SEAMAP VERSION	DATE DBASED			
AL	23	881	SUMMER SEAMAP	3	7	7	136	7	288	2	7	*1	*1	*1	*1	*1	454	2.02	17-May-93
AL	23	882	SUMMER SEAMAP	3	4	4	43	4	85	*1	*1	*1	*1	*1	*1	*1	140	2.02	17-May-93
AL	23	883	RED DRUM/KING MACKEREL	3	10	*1	*1	10	*1	*1	*1	*1	10	10			30	2.02	17-May-93
FL	36	881	SPRING ICHTHYOPLANKTON	3	17	*1	*1	17	*1	*1	*1	*1	17	47			81	2.0	16-Nov-92
FL	36	882	FALL ICHTHYOPLANKTON	3	36	*1	*1	36	*1	*1	*1	*1	36	107			179	2.0	16-Nov-92
LA	25	883	SUMMER SEAMAP	3	21	21	195	21	2064	*1	*1	*1	21	21			2343	3.2	30-Jul-96
LA	25	885	FALL SEAMAP	3	21	21	193	21	1410	*1	*1	*1	21	21			1687	3.2	30-Jul-96
LA	35	881	SPRING SEAMAP	3	24	24	563	24	7323	*1	*1	*1	11	26			7984	3.1	12-Oct-94
LA	35	882	SUMMER SEAMAP	3	24	24	571	24	7888	19	328	*1	12	36			8914	3.1	17-Jan-95
LA	35	884	FALL SEAMAP	3	20	20	489	20	5255	18	278	*1	10	27			6127	3.1	19-Jun-95
LA	35	886	FALL SEAMAP	3	24	23	688	24	8038	*1	*1	*1	8	24			8799	3.2	12-Aug-96
MS	17	881	SUMMER SEAMAP	3	47	41	928	47	6200	24	525	*1	6	17			7827	3.0	01-Jul-93
MS	17	882	FALL ICHTHYOPLANKTON	3	33	*1	*1	33	*1	*1	*1	*1	33	82			148	2.02	04-Jun-93
MS	17	883	FALL SEAMAP	3	28	23	644	28	4377	*1	*1	*1	3	9			5105	3.0	01-Jul-93
SC	51	881	SPRING SEAMAP	3	52	52	1583	32	4096	*1	*1	*1	*1	*1	*1	*1	5825	2.02	20-Nov-92
SC	51	882	SUMMER SEAMAP	3	52	52	1839	50	5518	*1	*1	*1	*1	*1	*1	*1	7511	2.02	01-Dec-92
SC	51	883	SUMMER SEAMAP	3	52	52	2063	44	9235	*1	*1	*1	*1	*1	*1	*1	11446	2.02	02-Dec-92
SC	51	884	SUMMER SEAMAP	3	52	52	1988	52	7234	*1	*1	*1	*1	*1	*1	*1	9378	2.02	20-Nov-92
SC	51	885	FALL SEAMAP	3	52	52	2347	52	8807	*1	*1	*1	*1	*1	*1	*1	11310	2.02	20-Nov-92
SC	51	886	FALL SEAMAP	3	52	52	2190	52	7501	*1	*1	*1	*1	*1	*1	*1	9847	2.02	01-Dec-92
SC	51	887	FALL SEAMAP	3	52	52	2223	52	6533	*1	*1	*1	*1	*1	*1	*1	8912	2.02	26-Nov-92
SC	51	888	FALL SEAMAP	3	52	52	2351	42	7552	*1	*1	*1	*1	*1	*1	*1	10049	2.02	02-Dec-92
TX	31	881	SUMMER SEAMAP	3	16	16	344	16	1706	13	442	*1	*1	*1	*1	*1	2553	2.02	04-Aug-93
TX	31	882	FALL SEAMAP	3	16	16	78	16	160	*1	*1	*1	*1	*1	*1	*1	284	2.02	05-Aug-93
TX	32	881	SUMMER SEAMAP	3	16	16	299	16	1312	14	290	*1	*1	*1	*1	*1	1963	2.02	04-Aug-93
TX	32	882	FALL SEAMAP	3	16	16	225	16	969	*1	*1	*1	*1	*1	*1	*1	1242	2.02	05-Aug-93
TX	33	881	SUMMER SEAMAP	3	16	16	117	16	330	5	13	*1	*1	*1	*1	*1	513	2.02	04-Aug-93
TX	33	882	FALL SEAMAP	3	16	16	247	16	1003	*1	*1	*1	*1	*1	*1	*1	1298	2.02	05-Aug-93
TX	34	881	SUMMER SEAMAP	3	16	16	144	16	644	10	43	*1	*1	*1	*1	*1	889	2.02	04-Aug-93
TX	34	882	FALL SEAMAP	3	16	16	210	16	920	*1	*1	*1	*1	*1	*1	*1	1178	2.02	05-Aug-93
TX	40	881	SUMMER SEAMAP	3	16	16	239	16	905	16	249	*1	*1	*1	*1	*1	1457	2.02	04-Aug-93
TX	40	882	FALL SEAMAP	3	16	16	131	16	461	*1	*1	*1	*1	*1	*1	*1	840	2.02	05-Aug-93
US	4	172	STRIPED BASS SURVEY	3	571	374	327	82	*1	*1	*1	*1	176	*2			1354	3.0	20-Jan-94
US	4	173	SPRING ICHTHYOPLANKTON SURVEY	3	165	*1	*1	165	*1	*1	*1	*1	143	290	1569	2348	4537	3.0	20-Sep-95
US	4	174	SEAMAP SHRIMP/GROUNDFISH	3	408	387	7465	192	40083	220	4850		5	19	57		53667	3.0	11-Dec-93
US	4	176	FALL ICHTHYOPLANKTON SURVEY	3	168	*1	*1	82	*1	*1	*1	*1	166	159	1464	3126	4999	3.1	26-Aug-94
US	4	177	SEAMAP FALL SHRIMP/GROUNDFISH	3	598	595	12342	210	54937	*1	*1		98	39	117		68897	3.0	02-Dec-93
TOTAL					2800	2140	43188	1581	202832	341	7025	103	731	1050	3033	5474	269567		

STATUS CODES

*1 NOT TAKEN
 *2 NOT ENTERED
 2 ENTERED IN P.C.
 3 ENTERED ON MIAMI UNISYS A10 SYSTEM(VERIFIED AND DATA BASED)

ATTACHMENT 4

SEAMAP 1989

DATA		INVENTOR		BIOLOGICAL		ENVIRONMENTA		GENERAL L/F		SHRIMP L/F		ICHTHYOPLANKTON			TOTAL	SEAMAP	DATE		
SOURCE	VESSEL	CRUISE	CRUISE REPORT TITLE	STATUS	STATION	SPECIES			STATION	L/F	STATION	L/F	MERISTICS	STATIO	SAMPLE	SPECIES	L/F	VERSION	DBASED
AL	23	891	SEAMAP CRUISE AL 891	3	7	7	103	7	363	3	98	*1	*1	*1	*1	*1	596	2.0	19-Mar-92
AL	23	892	SEAMAP CRUISE AL 892	3	10	10	205	10	991	7	168	*1	*1	*1	*1	*1	1399	2.0	19-Mar-92
AL	23	893	RED DRUM-KING MACKEREL CRUISE	3	10	*1	*1	10	*1	*1	*1	*1	10	10			30	2.0	19-Mar-92
AL	23	894	SEAMAP FALL GROUND FISH CRUISE	3	12	12	293	12	1452	11	164	*1	*1	*1	*1	*1	1956	2.0	19-Mar-92
FL	36	891	SPRING 1989 ICHTHYOPLANKTON	3	25	*1	*1	25	*1	*1	*1	*1	25	75			125	2.0	22-Jul-92
FL	36	892	FALL 1989 ICHTHYOPLANKTON	3	36	*1	*1	36	*1	*1	*1	*1	36	108			180	2.0	22-Jul-92
LA	35	891	LA 1989 SPRING SEAMAP	3	24	24	614	24	7914	21	140	*1	8	21			8782	2.0	28-Jul-92
LA	35	892	LA 1989 SUMMER SEAMAP	3	22	22	439	22	3984	17	292	*1	12	38			4834	2.0	28-Jul-92
LA	25	893	LA 1989 AREA SUMMER SEAMAP	3	21	21	163	21	1106	11	118	*1	21	24			1485	2.0	28-Jul-92
LA	35	894	LA 1989 FALL SEAMAP	3	24	24	572	24	4390	24	499	*1	12	36			5593	2.0	28-Jul-92
LA	25	895	LA 1989 AREA FALL SEAMAP	3	21	21	228	21	1943	11	224	*1	21	42			2511	2.0	28-Jul-92
LA	35	896	LA OREGON 2 PELICAN COMPARISON	3	10	10	286	10	2719	9	185	*1	*1	*1	*1	*1	3229	2.0	28-Jul-92
LA	35	897	LA 1989 WINTER SEAMAP	3	18	18	493	18	3635	16	587	*1	7	21			4780	2.0	28-Jul-92
MS	17	891	SUMMER SHRIMP/GROUND FISH SVY	3	41	34	989	41	7581	20	261	*1	7	21			8988	2.0	31-Oct-91
MS	17	892	FALL ICHTHYOPLANKTON SURVEY	3	65	*1	*1	65	*1	*1	*1	*1	65	75			205	2.0	30-Oct-91
MS	17	893	FALL SHRIMP/GROUND FISH SURVEY	3	20	17	588	20	4631	*1	*1	*1	3	9			5265	2.0	01-Nov-91
SC	51	891	SUMMER 89 SOUTH ATLANTIC	3	212	212	7890	212	12944	179	2299	*1	*1	*1	*1	*1	23748	2.0	08-Jul-92
SC	51	892	SUMMER 89 SOUTH ATLANTIC	3	106	106	2693	106	5930	48	808	*1	*1	*1	*1	*1	9797	2.0	08-Jul-92
SC	51	893	FALL SEAMAP 89 SOUTH ATLANTIC	3	212	212	5753	212	9372	116	1902	*1	*1	*1	*1	*1	17779	2.0	08-Jul-92
TX	31	891	CRUISE 891 GULF OF MEXICO	3	16	16	174	16	575	9	115	*1	*1	*1	*1	*1	921	2.0	18-May-92
TX	32	891	CRUISE 891 GULF OF MEXICO	3	16	16	323	16	1991	13	709	*1	*1	*1	*1	*1	3084	2.0	18-May-92
TX	33	891	CRUISE 891 GULF OF MEXICO	3	16	16	354	16	1965	16	546	*1	*1	*1	*1	*1	2929	2.0	18-May-92
TX	34	891	CRUISE 891 GULF OF MEXICO	3	16	16	268	16	1481	16	651	*1	*1	*1	*1	*1	2464	2.0	18-May-92
TX	40	891	CRUISE 891 GULF OF MEXICO	3	16	16	205	16	1035	15	382	*1	*1	*1	*1	*1	1685	2.0	18-May-92
TX	31	892	TX CRUISE 892	3	16	16	199	16	582	*1	*1	*1	*1	*1	*1	*1	829	2.0	18-May-92
TX	32	892	TX CRUISE 892	3	16	16	307	16	1826	*1	*1	*1	*1	*1	*1	*1	2181	2.0	18-May-92
TX	33	892	TX CRUISE 892	3	16	16	312	16	1421	*1	*1	*1	*1	*1	*1	*1	1781	2.0	18-May-92
TX	34	892	TX CRUISE 892	3	16	16	204	16	1112	*1	*1	*1	*1	*1	*1	*1	1364	2.0	18-May-92
TX	40	892	TX CRUISE 892	3	16	16	283	16	1462	*1	*1	*1	*1	*1	*1	*1	1773	2.0	18-May-92
US	4	179	SA-SEAMAP/BEAUFORT ECOSYSTEM	3	571	438	847	37	2178	*1	*1	*1					4069	2.0	05-Nov-92
US	4	180	OREGON II SUMMER SEAMAP	3	244	237	4178	172	26040	140	4815	*1	21	63			35889	2.0	21-Oct-92
US	4	183	SEAMAP ICHTHYOPLANKTON/PLUME	3	114	*1	*1	113	*1	*1	*1	*1	77	150	1855	4205	8437	2.02	02-Nov-92
US	4	184	SEAMAP SHRIMP/GROUND FISH	3	512	490	11997	229	66970	*1	*1	*1	6	39	117		80321	2.0	06-Oct-92
US	49	892	SEAMAP ICHTHYOPLANKTON/THERM	3	141	*1	*1	131	*1	*1	*1	*1	125	212			484	2.0	15-Dec-92
TOTAL					2636	2073	40720	1736	177591	702	14939	6	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)

ATTACHMENT 5

SEAMAP 1990

DATA SOURC	VESSEL	CRUISE	CRUISE REPORT TITLE	INVENTOR STATUS	BIOLOGICAL STATION	SPECIES	ENVIRONMENTAL	GENERAL L/F	SHRIMP L/F STATION	L/F MERISTICS	ICHTHYOPLANKTON STATIO	SAMPLE	SPECIES	L/F	TOTAL SEAMAP VERSION	DATE DBASED			
AL	23	901	SUMMER SHRIMP GROUND FISH	3	14	14	159	14	684	5	74	*1	*1	*1	*1	964	2.0	26-Mar-92	
AL	23	902	AL JULY SHRIMP-GROUND FISH	3	1	1	15	1	36	1	3	*1	*1	*1	*1	58	2.0	26-Mar-92	
AL	23	903	FALL KING MACKEREL/REDDRUM/PLA	3	10	*1	*1	10	*1	*1	*1	10	10	10	30	2.0	26-Mar-92		
AL	23	904	FALL SHRIMP GROUND FISH	3	13	13	203	9	775	*1	*1	*1	*1	*1	*1	1013	2.0	26-Mar-92	
FL	36	901	SPRING 1990 ICHTHYOPLANKTON	3	21	*1	*1	21	*1	*1	*1	21	61	103	2.0	22-Jul-92			
FL	36	902	FALL 1990 ICHTHYOPLANKTON	3	30	*1	*1	30	*1	*1	*1	30	90	150	2.0	22-Jul-92			
LA	35	901	LA SPRING SEAMAP	3	24	18	457	23	3581	15	128	*1	6	15	4281	2.0	28-Jul-92		
LA	35	902	LA SUMMER SEAMAP	3	31	24	444	31	3151	15	171	*1	7	21	3888	2.0	28-Jul-92		
LA	25	903	LA AREA SEAMAP CRUISE 903	3	21	21	142	21	1436	9	202	*1	21	42	1894	2.0	28-Jul-92		
LA	35	904	LA FALL SEAMAP	3	31	24	381	25	2954	18	174	*1	7	20	3627	2.0	28-Jul-92		
LA	25	905	LA FALL SEAMAP	3	21	21	125	21	833	7	121	*1	21	42	1191	2.0	28-Jul-92		
LA	35	908	LA WINTER SEAMAP	3	25	21	554	24	5978	20	952	*1	4	12	7586	2.0	28-Jul-92		
MS	17	901	SUMMER SHRIMP/GROUND FISH	3	44	40	1086	44	8868	10	395	*1	4	12	10499	2.0	01-Nov-91		
MS	17	902	FALL ICHTHYOPLANKTON SURVEY	3	107	*1	*1	107	*1	*1	*1	107	113	32	91	450	2.0	10-May-94	
MS	17	903	FALL SHRIMP/GROUND FISH SURVEY	3	24	24	727	20	4470	*1	*1	*1	*1	*1	*1	5265	2.0	01-Nov-91	
SC	51	901	SPRING SEAMAP SURVEY SOUTH ATL	3	210	210	4529	208	15747	60	702	*1	*1	*1	*1	21668	2.0	08-Jul-92	
SC	51	902	SUMMER SEAMAP S. ATLANTIC 90	3	156	156	4552	156	14060	91	1432	*1	*1	*1	*1	20603	2.0	08-Jul-92	
SC	51	903	FALL SEAMAP SURVEY SOUTH ATL	3	182	182	6041	182	12663	128	2884	*1	*1	*1	*1	22262	2.0	08-Jul-92	
TX	31	901	SUMMER SHRIMP/GROUND FISH	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	3	16	16	267	16	1569	11	431	*1	*1	*1	*1	2326	2.0	27-Mar-92	
TX	33	901	SUMMER SHRIMP/GROUND FISH	3	16	16	289	16	1605	14	205	*1	*1	*1	*1	2161	2.0	27-Mar-92	
TX	34	901	SUMMER SHRIMP/GROUND FISH	3	16	16	125	16	606	5	101	*1	*1	*1	*1	885	2.0	27-Mar-92	
TX	40	901	SUMMER SHRIMP/GROUND FISH	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	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	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	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	3	16	16	99	16	496	*1	*1	*1	*1	*1	*1	643	2.0	30-Mar-92	
TX	40	902	SHRIMP/GROUND FISH SURVEY	3	16	16	197	16	872	*1	*1	*1	*1	*1	*1	1117	2.0	30-Mar-92	
US	4	187	SEAMAP ICHTHYOPLANKTON	3	151	*1	*1	139	*1	*1	*1	139	408	686	2.0	07-Jan-92			
US	4	189	SPRING SHRIMP/GROUND FISH	3	290	267	5620	230	34308	219	6083	*1	19	57	47074	2.0	27-Sep-91		
US	4	190	PLANKTON SURVEY GULF OF MEXICO	3	133	*1	*1	131	*1	*1	*1	108	320	584	2.0	20-Sep-91			
US	4	191	SEAMAP/GROUND FISH SURVEY GOM	3	293	290	6725	218	39457	*1	*1	2	39	117	47102	2.0	23-Sep-91		
US	28	901	SEAMAP ECOSYSTEM S ATLANTIC	3	136	80	70	62	*1	*1	*1	*1	40	*2	*2	348	2.0	10-Jun-92	
TOTAL					2128	1566	33572	1887	157070	644	14345	2	583	1340	32	91	212677		

-28-

STATUS CODES:

*1 NOT TAKEN
 *2 NOT ENTERED
 2 ENTERED IN P.C.
 3 ENTERED ON MIAMI UNISYS A10 SYSTEM(VERIFIED AND DATA BASED)

ATTACHMENT 6

SEAMAP 1991

DATA SOURC	VESSEL	CRUISE	CRUISE REPORT TITLE	INVENTOR STATUS	BIOLOGICAL STATION	BIOLOGICAL SPECIES	ENVIRONMENTA	GENERAL L/F	SHRIMP L/F STATION	SHRIMP L/F MERISTICS	ICHTHYOPLANKTON STATIO	ICHTHYOPLANKTON SAMPLE	ICHTHYOPLANKTON SPECIES	ICHTHYOPLANKTON L/F	TOTAL SEAMAP VERSION	DATE DBASED			
AL	23	911	SUMMER SHRIMP GROUND FISH GOM	3	10	10	159	10	450	7	155	*1	*1	*1	801	2.0	28-Mar-92		
AL	23	912	KING MACKEREL RED DRUM PLANKT	3	10	*1	*1	10	*1	*1	*1	*1	10	10	30	2.0	28-Mar-92		
AL	23	913	GROUND FISH SURVEY GOM	3	7	7	174	7	935	*1	*1	*1	*1	*1	1130	2.0	28-Mar-92		
FL	36	911	SPRING 1991 ICHTHYOPLANKTON	3	13	*1	*1	13	*1	*1	*1	13	39		65	2.0	22-Jul-92		
FL	36	912	FALL 1991 ICHTHYOPLANKTON	3	23	*1	*1	23	*1	*1	*1	23	68		114	2.0	22-Jul-92		
LA	25	913	SUMMER SEAMAP	3	21	21	130	21	1479	6	62	*1	21	42	1762	2.02	30-Nov-92		
LA	25	915	FALL SEAMAP	3	21	21	193	21	1716	12	230	*1	21	42	2256	2.02	30-Nov-92		
LA	35	911	SPRING SEAMAP	3	29	22	602	29	6570	19	188	*1	7	21	7480	2.02	30-Nov-92		
LA	35	912	SUMMER SEAMAP	3	31	24	360	31	3368	12	251	*1	7	21	4098	2.02	30-Nov-92		
LA	35	914	FALL SEAMAP	3	31	24	461	30	3098	22	395	*1	7	21	4080	2.02	30-Nov-92		
LA	35	916	WINTER SEAMAP	3	31	24	606	30	5814	24	779	*1	7	16	7324	2.02	01-Dec-92		
MS	17	911	SHRIMP/GROUND FISH SURVEY	3	41	39	856	38	6402	27	989	*1	2	6	88	248	6734	2.0	10-May-94
MS	17	912	FALL ICHTHYOPLANKTON SUR GOM	3	118	*1	*1	118	*1	*1	*1	101	107		35	132	510	2.0	19-May-94
MS	17	913	SEAMAP CRUISE MS 913	3	27	27	657	27	4652	*1	*1	*1	*1	*1	*1	*1	5390	2.0	26-Feb-92
PR	56	911	CARIBBEAN SURVEY	3	417	417	415	*1	*1	*1	*1	1741	*1	*1	*1	*1	2990	3.2	01-Jul-96
PR	57	912	CARIBBEAN SURVEY	3	102	102	89	*1	*1	*1	*1	341	*1	*1	*1	*1	634	3.2	24-Jun-96
SC	51	911	SPRING SOUTH ATLANTIC SURVEY	3	210	210	6022	210	15930	108	1931	*1	*1	*1	*1	*1	24621	2.0	15-Apr-92
SC	51	912	SUMMER SOUTH ATLANTIC SEAMAP S	3	156	156	3979	156	12688	75	1155	*1	*1	*1	*1	*1	18365	2.0	05-May-92
SC	51	913	FALL SEAMAP SOUTH ATLANTIC	3	172	172	4732	172	12249	99	2081	*1	*1	*1	*1	*1	19657	2.0	12-May-92
TX	31	911	SUMMER SEAMAP	3	16	16	250	16	1354	10	76	*1	*1	*1	*1	*1	1738	2.0	28-Sep-92
TX	32	911	SUMMER SEAMAP	3	16	16	270	16	1406	13	156	*1	*1	*1	*1	*1	1893	2.0	28-Sep-92
TX	33	911	SUMMER SEAMAP	3	16	16	182	16	596	10	99	*1	*1	*1	*1	*1	935	2.0	28-Sep-92
TX	34	911	SUMMER SEAMAP	3	16	16	138	16	681	10	51	*1	*1	*1	*1	*1	928	2.0	28-Sep-92
TX	40	911	SUMMER SEAMAP	3	16	16	187	16	891	12	182	*1	*1	*1	*1	*1	1320	2.0	28-Sep-92
TX	31	912	FALL SEAMAP	3	16	16	154	16	639	*1	*1	*1	*1	*1	*1	*1	841	2.0	16-Oct-92
TX	32	912	FALL SEAMAP	3	16	16	236	16	1015	*1	*1	*1	*1	*1	*1	*1	1299	2.0	16-Oct-92
TX	33	912	FALL SEAMAP	3	16	16	112	16	352	*1	*1	*1	*1	*1	*1	*1	512	2.0	16-Oct-92
TX	34	912	FALL SEAMAP	3	16	16	148	16	563	*1	*1	*1	*1	*1	*1	*1	759	2.0	16-Oct-92
TX	40	912	FALL SEAMAP	3	16	16	137	16	545	*1	*1	*1	*1	*1	*1	*1	730	2.0	16-Oct-92
US	4	192	ATLANTIC SEAMAP	3	314	208	*1	107	*1	*1	*1	*1	*1	*1	*1	*1	629	2.0	30-Oct-91
US	4	194	SEAMAP GULF PLANKTON SUR	3	159	*1	*1	139	*1	*1	*1	159	442				740	2.0	15-Apr-92
US	4	195	SEAMAP SPRING GROUND FISH SURV	3	288	267	6548	223	40667	186	7976	*1	37	111			56264	2.0	12-Dec-91
US	4	197	FALL BOTTOM FISH SURVEY	3	327	293	7389	241	42639	*1	*1	*1	40	120	1353	3335	55697	2.0	19-May-94
US	28	914	FALL SEAMAP ICHTHYOPLANKTON SU	3	166	*1	*1	138	*1	*1	*1	96	296		1102	2487	4179	2.0	17-May-94
TOTAL					2884	2204	35184	1954	166697	652	16736		551	1352	2578	6202	238525		

STATUS CODES:

- *1 NOT TAKEN
- 2 ENTERED IN P.C.
- 3 ENTERED ON MIAMI UNISYS A10 SYSTEM (VERIFIED AND DATA BASED)

ATTACHMENT 7

SEAMAP 1992

DATA SOURC	VESSEL	CRUISE	CRUISE REPORT TITLE	INVENTOR STATUS	BIOLOGICAL STATION	SPECIES	ENVIRONMENTA	GENERAL L/F	SHRIMP L/F STATION	L/F MERISTICS	STATIO	ICHTHYOPLANKTON SAMPLE	SPECIES L/F	TOTAL SEAMAP VERSION	DATE DBASED				
AL	23	920	REEFFISH TRAP/VIDEO	3	7	7	3	*1	*1	*1	20	*1	*1	*1	37	3.0	28-Jan-94		
AL	23	921	SUMMER SEAMAP	3	16	16	332	16	2059	6	78	*1	*1	*1	2523	2.1	06-Jan-93		
AL	23	922	FALL SEAMAP ICHTHYOPLANKTON	3	9	*1	*1	9	*1	*1	*1	9	9	*1	27	2.1	06-Jan-93		
AL	23	923	FALL SEAMAP	3	8	8	193	8	1099	*1	*1	*1	*1	*1	1318	2.1	06-Jan-93		
FL	26	921	SPRING ICHTHYOPLANKTON	3	21	*1	*1	21	*1	*1	*1	21	57	837	1521	2457	2.02	18-May-94	
FL	26	922	FALL ICHTHYOPLANKTON	3	14	*1	*1	14	*1	*1	*1	13	37	426	834	1325	2.02	20-Sep-95	
LA	35	921	SPRING SEAMAP	3	30	24	625	30	7081	24	233	*1	6	18	8045	3.0	16-Nov-93		
LA	35	922	SUMMER SEAMAP	3	31	24	373	31	4215	12	88	*1	7	21	4795	3.0	16-Nov-93		
LA	35	923	FALL SEAMAP	3	25	20	342	23	2551	19	315	*1	5	10	3305	3.0	16-Nov-93		
LA	35	924	WINTER SEAMAP	3	31	24	659	31	7812	23	674	*1	7	20	9274	3.0	16-Nov-93		
MS	17	921	SEAMAP TRAP/VIDEO SURVEY	3	16	16	13	16	48	*1	*1	48	*1	*1	157	3.0	02-Mar-93		
MS	17	922	SUMMER SEAMAP	3	44	42	1093	38	8408	32	916	*1	2	6	10579	2.02	06-Mar-93		
MS	17	924	FALL GROUND FISH	3	15	15	335	15	2445	*1	*1	*1	*1	*1	2825	3.0	06-Oct-93		
PR	56	921	CARIBBEAN SURVEY	3	600	600	734	*1	*1	*1	*1	2674	*1	*1	*1	4608	3.2	22-Jul-96	
PR	56	922	CARIBBEAN SURVEY	3	647	647	327	*1	*1	*1	*1	709	*1	*1	*1	2330	3.2	22-Jul-96	
PR	57	922	CARIBBEAN SURVEY	3	90	90	160	*1	*1	*1	*1	628	*1	*1	*1	968	3.2	03-Jul-96	
SC	51	921	SPRING SOUTH ATLANTIC SURVEY	3	210	210	5045	210	13967	95	1053	*1	*1	*1	*1	20790	2.02	29-Sep-92	
SC	51	922	SUMMER SOUTH ATLANTIC SURVEY	3	158	158	3801	158	8568	50	537	*1	*1	*1	*1	13424	2.02	30-Dec-92	
SC	51	923	FALL SEAMAP	3	188	188	4958	188	9692	89	1198	*1	*1	*1	*1	16501	2.02	27-Jan-93	
TX	31	921	SUMMER SEAMAP	3	16	16	168	16	827	12	159	*1	*1	*1	*1	1214	2.02	25-Mar-93	
TX	32	921	SUMMER SEAMAP	3	16	16	197	16	1043	7	34	*1	*1	*1	*1	1329	2.02	25-Mar-93	
TX	33	921	SUMMER SEAMAP	3	16	16	195	16	805	7	23	*1	*1	*1	*1	1078	2.02	26-Mar-93	
TX	34	921	SUMMER SEAMAP	3	16	16	158	16	769	12	90	*1	*1	*1	*1	1077	2.02	26-Mar-93	
TX	40	921	SUMMER SEAMAP	3	16	16	147	16	727	9	63	*1	*1	*1	*1	984	2.02	26-Mar-93	
TX	31	922	FALL SEAMAP	3	16	16	227	16	1141	*1	*1	*1	*1	*1	*1	1416	3.0	01-Jul-93	
TX	32	922	FALL SEAMAP	3	16	16	291	16	1655	*1	*1	*1	*1	*1	*1	1994	3.0	01-Jul-93	
TX	33	922	FALL SEAMAP	3	16	16	160	16	454	*1	*1	*1	*1	*1	*1	662	3.0	01-Jul-93	
TX	34	922	FALL SEAMAP	3	16	16	270	16	1442	*1	*1	*1	*1	*1	*1	1760	3.0	01-Jul-93	
TX	40	922	FALL SEAMAP	3	16	16	193	16	910	*1	*1	*1	*1	*1	*1	1151	3.0	01-Jul-93	
US	4	199	SPRING ICHTHYOPLANKTON	3	248	*1	*1	208	*1	*1	*1	147	436		892	2.02	09-Mar-93		
US	4	200	SUMMER SEAMAP	3	284	260	6763	221	39987	174	3463	*1	41	123	51275	2.02	19-Jan-93		
US	4	201	FALL ICHTHYOPLANKTON	3	49	*1	*1	49	*1	*1	*1	27	79	1048	2236	3459	3.0	24-May-94	
US	4	202	FALL BOTTOMFISH SURVEY	3	294	273	7061	220	43846	*1	*1	6	30	90	378	732	52900	3.0	20-Sep-95
US	28	923	REEFFISH CRUISE	3	179	147	113	149	*1	*1	*1	607	29	147	1342	3.0	14-Jul-93		
US	28	925	FALL ICHTHYOPLANKTON	3	118	*1	*1	116	*1	*1	*1	*1	73	219	453	3.0	02-Sep-93		
VI	58	922	VIRGIN ISL REEFFISH 1992	3	63	63	85	*1	*1	*1	*1	128	*1	*1	*1	339	3.1	19-May-95	
VI	59	922	VIRGIN ISL REEFFISH 1992	3	16	16	12	*1	*1	*1	*1	20	*1	*1	64	3.1	19-May-95		
TOTAL					3569	3006	35033	1929	161531	571	8924	4840	417	1272	2687	5323	228685		

STATUS CODES

*1 NOT TAKEN
 2 ENTERED IN P.C.
 3 ENTERED ON MIAMI UNISYS A10 SYSTEM(VERIFIED AND DATA BASED)

ATTACHMENT 8

SEAMAP 1993

DATA SOURC	VESSEL	CRUISE	CRUISE REPORT TITLE	STATUS	INVENTOR	BIOLOGICAL STATION	SPECIES	ENVIRONMENTA	GENERAL L/F	SHRIMP L/F STATION	L/F MERISTICS	STATIO	ICHTHYOPLANKTON SAMPLE	SPECIES	L/F	TOTAL SEAMAP VERSION	DATE OBASED		
AL	23	930	COMPARITIVE TOW	3	22	22	494	18	441	*1	*1	*1	*1	*1		997	3.0	19-Jan-9	
AL	23	931	SUMMER SEAMAP	3	10	10	212	10	953	5	95	*1	*1	*1	*1	1295	3.0	19-Jan-9	
AL	23	932	FALL ICHTHYOPLANKTON	3	9	*1	*1	9	*1	*1	*1	*1	9	9	*1	27	3.0	19-Jan-9	
AL	23	933	FALL SEAMAP	3	9	9	199	9	1108	*1	*1	*1	*1	*1		1334	3.0	19-Jan-9	
AL	23	934	REEFFISH TRAP/MDEO	3	11	11	24	11	*1	*1	*1	343	*1	*1	*1	400	3.0	06-Jul-9	
FL	26	932	FALL ICHTHYOPLANKTON	3	36	*1	*1	36	*1	*1	*1	*1	36	108		180	3.0	15-Feb-9	
FL	30	931	SPRING ICHTHYOPLANKTON	3	19	*1	*1	19	*1	*1	*1	*1	19	57		95	3.0	10-Nov-9	
LA	35	931	SPRING SEAMAP	3	31	24	680	30	8117	20	189	*1	7	21		9112	3.0	08-Apr-9	
LA	35	932	SUMMER SEAMAP	3	31	24	443	30	5597	22	535	*1	7	21		6703	3.0	08-Apr-9	
LA	35	933	FALL SEAMAP	3	31	24	501	29	5012	19	414	*1	7	21		6051	3.0	18-Apr-9	
LA	35	934	WINTER SEAMAP	3	29	24	619	29	7615	23	721	*1	5	15		9075	3.0	18-Apr-9	
MS	17	930	SEAMAP COMPARATIVE TOW	3	22	22	551	*1	409	*1	*1	*1	*1	*1	*1	1004	3.0	15-Oct-9	
MS	17	931	TRAP/MDEO	3	8	8	2	8	*1	*1	*1	4	*1	*1	*1	30	3.0	08-Mar-9	
MS	17	932	SUMMER SEAMAP	3	37	35	908	37	7420	29	832	*1	2	6		9304	3.0	08-Mar-9	
MS	17	933	FALL ICHTHYOPLANKTON	3	48	*1	*1	48	*1	*1	*1	*1	48	48		144	3.0	17-Jun-9	
MS	17	934	FALL ICHTHYOPLANKTON	3	47	*1	*1	47	*1	*1	*1	*1	47	53		147	3.0	05-Jul-9	
MS	17	935	FALL SEAMAP	3	27	25	688	27	4713	*1	*1	*1	2	6		5486	3.0	07-Jun-9	
PR	56	931	CARIBBEAN CRUISE	3	600	600	466	*1	*1	*1	*1	1297	*1	*1	*1	2963	3.2	22-Jul-9	
PR	56	932	CARIBBEAN CRUISE	3	563	563	468	*1	*1	*1	*1	1106	*1	*1	*1	2700	3.2	24-Jul-9	
PR	57	932	CARIBBEAN CRUISE	3	499	498	316	*1	*1	*1	*1	746	*1	*1	*1	2057	3.2	05-Nov-9	
PR	57	933	CARIBBEAN CRUISE	3	581	581	435	*1	*1	*1	*1	1013	*1	*1	*1	2570	3.2	05-Nov-9	
SC	51	931	SPRING SEAMAP	3	210	210	4267	210	8920	80	1080	*1	*1	*1	*1	14977	3.0	03-Feb-9	
SC	51	932	SUMMER SEAMAP	3	156	156	3680	156	8484	65	1604	*1	*1	*1	*1	14301	3.0	28-Jan-9	
SC	51	933	FALL SEAMAP	3	188	188	4471	188	8600	105	1868	*1	*1	*1	*1	15608	3.0	28-Jan-9	
TX	31	931	SUMMER SEAMAP	3	16	16	328	16	1807	14	106	*1	*1	*1	*1	2303	3.0	24-Mar-9	
TX	32	931	SUMMER SEAMAP	3	16	16	250	16	1414	10	37	*1	*1	*1	*1	1759	3.0	30-Mar-9	
TX	33	931	SUMMER SEAMAP	3	16	16	271	16	874	8	98	*1	*1	*1	*1	1299	3.0	30-Mar-9	
TX	34	931	SUMMER SEAMAP	3	16	16	110	16	513	2	14	*1	*1	*1	*1	687	3.0	30-Mar-9	
TX	40	931	SUMMER SEAMAP	3	16	16	213	16	1058	11	345	*1	*1	*1	*1	1673	3.0	30-Mar-9	
TX	31	932	FALL SEAMAP	3	16	16	215	16	882	*1	*1	*1	*1	*1	*1	1145	3.0	01-Jul-9	
TX	32	932	FALL SEAMAP	3	16	16	253	16	1040	*1	*1	*1	*1	*1	*1	1341	3.0	01-Jul-9	
TX	33	932	FALL SEAMAP	3	16	16	304	16	1057	*1	*1	*1	*1	*1	*1	1409	3.0	01-Jul-9	
TX	34	932	FALL SEAMAP	3	16	16	113	16	331	*1	*1	*1	*1	*1	*1	492	3.0	01-Jul-9	
TX	40	932	FALL SEAMAP	3	16	16	200	16	1189	*1	*1	*1	*1	*1	*1	1437	3.0	01-Jul-9	
US	4	203	MARINE MAMMAL/ICHTHYO	3	212	*1	*1	107	*1	*1	*1	*1	116	425		744	3.0	16-Nov-9	
US	4	204	ICHTHYOPLANKTON MAMMALS	3	274	*1	*1	160	*1	*1	*1	*1	121	367	1267	2168	4236	3.0	20-Sep-9
US	4	205	SUMMER SEAMAP	3	298	277	6899	222	40984	178	5465	*1	41	122		54445	3.0	06-May-9	
US	4	207	FALL ICHTHYOPLANKTON	3	11	*1	*1	11	*1	*1	*1	*1	10	30		52	3.0	31-May-9	
US	4	208	FALL GROUND FISH	2	303	285	7624	245	46394	*1	*1	*1	36	108		54959	3.1	15-Jul-9	
US	28	934	SPRING ICHTHYOPLANKTON	3	91	*1	*1	82	*1	*1	*1	*1	82	235	1096	1840	3344	3.0	20-Sep-9
US	28	935	REEFFISH ICHTHYOPLANKTON	3	213	185	89	180	*1	*1	*1	387	28	107		1161	3.0	16-Feb-9	
US	28	936	FALL ICHTHYOPLANKTON	3	162	*1	*1	159	*1	*1	*1	*1	72	216		537	3.0	04-May-9	
VI	58	931	VIRGIN ISL REEFFISH 1993	3	15	15	*1	*1	*1	*1	*1	*1	*1	*1	*1	30	3.1	23-May-9	
VI	59	932	VIRGIN ISL REEFFISH 1993	3	30	30	8	*1	*1	*1	*1	9	*1	*1	*1	77	3.1	19-May-9	
VI	60	932	REEFFISH SURVEY	3	24	24	43	*1	*1	*1	*1	92	*1	*1	*1	183	3.1	10-Nov-9	
TOTAL					4997	3988	36344	2277	164930	591	13403	4997	695	1975	2363	4008	239873		
STATUS CODES	*1 NOT TAKEN 2 ENTERED IN P.C. 3 ENTERED ON MIAMI UNISYS A10 SYSTEM(VERIFIED AND DATA BASED)																		

ATTACHMENT 9

SEAMAP 1994

DATA SOURC	VESSEL	CRUISE	INVENTOR STATUS	BIOLOGICAL STATION	SPECIES	ENVIRONMENTAL	GENERAL L/F	SHRIMP L/F STATION	L/F MERISTICS	ICHTHYOPLANKTON STATIO	SAMPLE SPECIES	L/F	TOTAL	SEAMAP VERSION	DATE DBASED			
AL	23	941	SUMMER SEAMAP	3	8	8	223	8	1570	5	202	*1	*1	*1	2024	3.1	08-Nov-9	
AL	23	942	FALL ICHTHYOPLANKTON	3	9	*1	*1	9	*1	*1	*1	*1	9	9	27	3.1	17-Jul-9	
AL	23	943	FALL SEAMAP	3	8	8	159	8	1036	*1	*1	*1	*1	*1	1219	3.1	26-Jun-9	
AL	23	944	TRAP/MDEO	3	11	11	25	11	*1	*1	*1	379	*1	*1	437	3.1	04-Aug-9	
FL	36	941	SPRING ICHTHYOPLANKTON	3	5	*1	*1	5	*1	*1	*1	*1	5	15	25	3.1	19-Oct-9	
FL	36	942	FALL ICHTHYOPLANKTON	3	29	*1	*1	29	*1	*1	*1	*1	29	87	145	3.1	16-Feb-9	
LA	35	940	COMPARATIVE TOW	3	49	49	1433	11	398	42	268	*1	*1	*1	2250	3.1	21-Sep-9	
LA	35	941	SPRING SEAMAP	3	31	24	697	31	9424	23	153	*1	7	19	10402	3.1	21-Sep-9	
LA	35	942	SUMMER SEAMAP	3	31	24	539	31	6411	17	465	*1	7	21	7539	3.1	28-Apr-9	
LA	35	943	FALL SEAMAP	3	31	24	588	31	5843	23	439	*1	7	21	7100	3.1	28-Apr-9	
LA	35	944	WINTER SEAMAP	3	24	20	485	24	4253	20	571	*1	4	10	5387	3.1	28-Apr-9	
MS	17	940	COMPARATIVE TOW	3	49	49	1427	*1	498	*1	*1	*1	*1	*1	2021	3.0	21-Sep-9	
MS	17	941	SUMMER SEAMAP	3	39	37	993	39	8131	28	923	*1	2	6	10198	3.1	17-May-9	
MS	17	942	REEFFISH SURVEY	3	9	9	20	9	*1	*1	*1	99	*1	*1	148	3.1	07-Apr-9	
MS	17	943	FALL ICHTHYOPLANKTON	3	47	*1	*1	47	*1	*1	*1	*1	47	51	145	3.1	25-Jul-9	
MS	17	944	FALL ICHTHYOPLANKTON	3	2	*1	*1	2	*1	*1	*1	*1	2	6	10	3.1	25-Jul-9	
MS	17	945	FALL GROUND FISH	3	23	23	562	12	4204	*1	*1	*1	*1	*1	4824	3.1	07-Apr-9	
PR	56	941	CARIBBEAN SURVEY	3	170	170	237	*1	*1	*1	*1	775	*1	*1	1352	3.2	03-Jul-9	
PR	57	942	CARIBBEAN SURVEY	3	499	499	336	*1	*1	*1	*1	698	*1	*1	2032	3.2	05-Nov-9	
PR	57	943	CARIBBEAN SURVEY	3	595	595	689	*1	*1	*1	*1	1843	*1	*1	3722	3.2	05-Nov-9	
SC	51	941	SPRING SEAMAP	3	210	210	4051	210	7228	52	454	*1	*1	*1	12415	3.1	21-Sep-9	
SC	51	942	SUMMER SEAMAP	3	156	156	3360	156	7227	56	1109	*1	*1	*1	12220	3.1	13-Oct-9	
SC	51	943	FALL SEAMAP	3	188	188	5319	188	11833	116	2903	*1	*1	*1	20735	3.1	16-Feb-9	
TX	31	941	SUMMER SEAMAP	3	16	16	200	16	1278	6	70	*1	*1	*1	1602	3.1	21-Jun-9	
TX	32	941	SUMMER SEAMAP	3	16	16	199	16	1124	8	34	*1	*1	*1	1413	3.1	21-Jun-9	
TX	33	941	SUMMER SEAMAP	3	16	16	147	16	353	5	35	*1	*1	*1	588	3.1	21-Jun-9	
TX	34	941	SUMMER SEAMAP	3	16	16	127	16	675	10	117	*1	*1	*1	977	3.1	21-Jun-9	
TX	40	941	SUMMER SEAMAP	3	16	16	129	16	688	5	28	*1	*1	*1	878	3.1	21-Jun-9	
TX	31	942	FALL SEAMAP	3	16	16	270	16	1519	*1	*1	*1	*1	*1	1837	3.1	21-Jun-9	
TX	32	942	FALL SEAMAP	3	16	16	251	16	1456	*1	*1	*1	*1	*1	1755	3.1	21-Jun-9	
TX	33	942	FALL SEAMAP	3	16	16	140	16	538	*1	*1	*1	*1	*1	726	3.1	21-Jun-9	
TX	34	942	FALL SEAMAP	3	16	16	121	16	525	*1	*1	*1	*1	*1	694	3.1	21-Jun-9	
TX	40	942	FALL SEAMAP	3	16	16	146	16	562	*1	*1	*1	*1	*1	756	3.1	21-Jun-9	
US	4	209	SPRING ICHTHYOPLANKTON	3	217	*1	*1	155	*1	*1	*1	*1	122	505	877	3.1	12-Oct-9	
US	4	210	SUMMER SEAMAP	3	273	246	6212	239	42521	193	5352	*1	42	125	55161	3.1	16-Feb-9	
US	4	214	FALL GROUND FISH	3	288	253	7781	251	51577	*1	*1	*1	48	144	60294	3.1	18-May-9	
US	28	944	ICHTHYOPLANKTON SURVEY	3	60	*1	*1	60	*1	*1	*1	*1	60	173	293	3.1	19-Oct-9	
US	28	945	REEFFISH SURVEY	3	191	160	111	159	291	*1	*1	432	30	115	1459	3.1	23-Mar-9	
US	28	946	FALL ICHTHYOPLANKTON	3	121	*1	*1	88	*1	*1	*1	*1	88	264	473	3.1	22-Mar-9	
VI	59	941	VIRGIN ISL REEFFISH 1994	3	88	88	38	*1	*1	*1	*1	63	*1	*1	277	3.1	19-May-9	
VI	60	941	REEFFISH SURVEY	3	34	34	62	*1	*1	*1	*1	167	*1	*1	297	3.1	09-Nov-9	
TOTAL					3655	3045	37057	1973	171241	609	13123	4456	509	1571		236730		

STATUS CODES:

- *1 NOT TAKEN
- 2 ENTERED IN P.C.
- 3 ENTERED ON MIAMI UNISYS A10 SYSTEM(VERIFIED AND DATA BASED)

ATTACHMENT 10

SEAMAP 1995

DATA	SOURC	VESSEL	CRUISE	INVENTOR	BIOLOGICAL	ENVIRONMENTA	GENERAL L/F	SHRIMP L/F	ICHTHYOPLANKTON			TOTAL	SEAMAP	DATE					
				STATUS	STATION	SPECIES		STATION	L/F	MERISTICS	STATIO	SAMPLE	SPECIES	L/F	VERSION	DBASED			
AL	23	950	TRAP/VIDEO	3	12	12	21	12	*1	*1	*1	231	*1	*1	*1	288	3.2	16-Oct-96	
AL	23	951	SUMMER SEAMAP	3	10	10	205	10	1440	10	318	*1	*1	*1	*1	2001	3.2	01-Aug-96	
AL	23	952	FALL ICHTHYOPLANKTON	3	9	*1	*1	9	*1	*1	*1	9	9			27	3.2	01-Aug-96	
AL	23	953	WINTER SEAMAP	3	6	6	127	6	942	*1	*1	*1	*1	*1	*1	1087	3.2	01-Aug-96	
FL	26	951	SPRING ICHTHYOPLANKTON	3	15	*1	*1	15	*1	*1	*1	15	45			75	3.1	04-Aug-95	
FL	26	952	FALL ICHTHYOPLANKTON	3	25	*1	*1	25	*1	*1	*1	25	74			124	3.2	01-Mar-96	
LA	35	951	SPRING SEAMAP	3	31	24	534	31	5381	20	168	*1	7	21		6188	3.2	30-Jul-96	
LA	35	952	SUMMER SEAMAP	3	25	18	404	25	5024	15	352	*1	7	21		5884	3.2	30-Jul-96	
LA	35	953	FALL SEAMAP	3	31	24	385	31	3316	19	271	*1	7	21		4086	3.2	30-Jul-96	
MS	17	951	SUMMER SEAMAP	3	40	38	1128	40	9015	34	1051	*1	2	6		11350	3.2	23-May-96	
MS	17	952	FALL ICHTHYOPLANKTON	3	49	*1	*1	49	*1	*1	*1	49	64			162	3.2	07-Oct-96	
MS	17	953	TRAP/VIDEO	3	8	8	5	8	29	*1	*1	*1	*1		*1	58	3.2	23-May-96	
MS	17	954	FALL SEAMAP	3	28	25	531	28	3103	*1	*1	*1	1	3		3714	3.2	23-May-96	
PR	57	952	CARIBBEAN SURVEY	3	350	350	308	*1	*1	*1	*1	1127	*1	*1	*1	2135	3.1	09-Nov-96	
SC	51	951	SPRING SEAMAP	3	210	210	4696	210	10439	92	987	*1	*1	*1	*1	16844	3.1	21-Jul-95	
SC	51	952	SUMMER SEAMAP	3	156	156	4075	156	11808	95	2053	*1	*1	*1	*1	18497	3.2	01-Mar-96	
SC	51	953	FALL SEAMAP	3	188	188	4229	188	9885	99	2206	*1	*1	*1	*1	16983	3.2	12-Mar-96	
TX	31	951	SUMMER SEAMAP	3	16	16	233	16	1184	6	55	*1	*1	*1	*1	1526	3.2	30-Jul-96	
TX	32	951	SUMMER SEAMAP	3	16	16	372	16	2621	15	365	*1	*1	*1	*1	3421	3.2	30-Jul-96	
TX	33	951	SUMMER SEAMAP	3	16	16	175	16	466	7	22	*1	*1	*1	*1	718	3.2	30-Jul-96	
TX	34	951	SUMMER SEAMAP	3	16	16	149	16	507	8	11	*1	*1	*1	*1	723	3.2	30-Jul-96	
TX	40	951	SUMMER SEAMAP	3	16	16	161	16	796	11	352	*1	*1	*1	*1	1368	3.2	30-Jul-96	
TX	31	952	FALL SEAMAP	3	16	16	237	16	780	*1	*1	*1	*1	*1	*1	1065	3.2	24-Jul-96	
TX	32	952	FALL SEAMAP	3	16	16	287	16	1581	*1	*1	*1	*1	*1	*1	1916	3.2	24-Jul-96	
TX	33	952	FALL SEAMAP	3	16	16	206	16	943	*1	*1	*1	*1	*1	*1	1197	3.2	24-Jul-96	
TX	34	952	FALL SEAMAP	3	16	16	182	16	758	*1	*1	*1	*1	*1	*1	968	3.2	24-Jul-96	
TX	40	952	FALL SEAMAP	3	16	16	120	16	363	*1	*1	*1	*1	*1	*1	531	3.2	24-Jul-96	
TX	31	953	TRAP/VIDEO	3	2	2	6	*1	41	*1	*1	*1	*1	*1	*1	51	3.2	31-Dec-96	
US	4	216	SPRING ICHTHYOPLANKTON	3	309	*1	*1	286	*1	*1	*1	266	778			1353	3.2	16-Oct-96	
US	4	217	SUMMER SEAMAP	3	233	220	6353	203	45116	172	7538	*1	21	62		59897	3.2	20-Mar-96	
US	4	219	FALL SEAMAP	3	249	234	7114	208	46287	*1	*1	*1	23	64		54156	3.2	11-Apr-96	
US	28	954	REEF SURVEY	3	165	133	69	127	*1	*1	*1	191	31	59		744	3.2	26-Sep-96	
US	28	955	FALL ICHTHYOPLANKTON	3	110	*1	*1	107	*1	*1	*1	*1	110	285		502	3.2	31-May-96	
TOTAL					2419	1818	32310	1912	161803	603	15745	1549	573	1512			219671		

STATUS CODES:

*1 NOT TAKEN
 2 ENTERED IN P.C.
 3 ENTERED ON MIAMI UNISYS A10 SYSTEM(VERIFIED AND DATA BASED)

SEAMAP 1996

DATA SOURCE	VESSEL	CRUISE	INVENTOR STATUS	BIOLOGICAL STATION	SPECIES	ENVIRONMENTAL	GENERAL L/F	SHRIMP L/F STATION	L/F MERISTICS	STATIO	ICHTHYOPLANKTON SAMPLE	SPECIES	L/F	TOTAL	SEAMAP VERSION	DATE DBASED
AL	23	961	3	10	10	278	10	1995	5	40	*1	*1	*1	2348	3.3	29-Sep-97
AL	23	962	3	9	*1	*1	9	*1	*1	*1	*1	9	9	27	3.3	29-Sep-97
AL	23	963	3	7	7	188	7	1396	*1	*1	*1	*1	*1	1605	3.3	29-Sep-97
AL	23	964	3	7	7	10	7	*1	*1	*1	165	*1	*1	196	3.3	29-Sep-97
FL	26	961	3	18	*1	*1	18	*1	*1	*1	*1	18	54	90	3.2	29-Jan-97
FL	26	962	3	19	*1	*1	19	*1	*1	*1	*1	19	57	95	3.3	13-May-97
LA	35	960	3	31	24	462	31	4915	23	426	*1	7	19	5931	3.2	19-Aug-96
LA	35	961	3	30	24	399	30	4339	12	360	*1	6	18	5212	3.2	27-Nov-96
LA	35	962	3	31	24	333	31	2972	13	70	*1	7	21	3495	3.2	27-Jan-97
LA	35	963	3	31	24	617	31	6395	24	586	*1	7	20	7728	3.3	20-May-97
MS	17	961	3	40	38	925	40	7102	28	642	*1	2	6	8821	3.2	27-Nov-96
MS	17	962	3	46	*1	*1	46	*1	*1	*1	*1	46	53	145	3.3	05-May-97
MS	17	963	3	29	27	463	29	2460	*1	*1	*1	2	6	3014	3.3	05-May-97
SC	51	961	3	210	210	2615	210	7502	37	219	*1	*1	*1	11003	3.2	11-Jul-96
SC	51	962	3	156	156	4053	156	10559	102	2059	*1	*1	*1	17241	3.2	15-Jan-97
SC	51	963	3	188	188	6390	188	14853	149	4297	*1	*1	*1	26253	3.2	29-Jan-97
TX	31	961	3	16	16	230	16	896	9	69	*1	*1	*1	1252	3.3	30-Jun-97
TX	32	961	3	16	16	267	16	1423	14	74	*1	*1	*1	1826	3.3	30-Jun-97
TX	33	961	3	16	16	152	16	489	6	16	*1	*1	*1	711	3.3	30-Jun-97
TX	34	961	3	16	16	146	16	867	9	52	*1	*1	*1	1122	3.3	30-Jun-97
TX	40	961	3	16	16	156	16	812	8	89	*1	*1	*1	1113	3.3	30-Jun-97
TX	31	962	3	16	16	179	16	1133	*1	*1	*1	*1	*1	1360	3.3	30-Jun-97
TX	32	962	3	16	16	285	16	1367	*1	*1	*1	*1	*1	1700	3.3	30-Jun-97
TX	33	962	3	16	16	161	16	631	*1	*1	*1	*1	*1	840	3.3	30-Jun-97
TX	34	962	3	16	16	162	16	562	*1	*1	*1	*1	*1	772	3.3	02-Jul-97
TX	40	962	3	16	16	244	16	1477	*1	*1	*1	*1	*1	1769	3.3	30-Jun-97
US	4	220	3	172	*1	*1	165	*1	*1	*1	*1	172	506	843	3.2	16-Oct-96
US	4	221	3	255	236	6027	215	41026	173	4999	*1	22	66	52997	3.2	27-Nov-96
US	4	223	3	63	63	1428	*1	2457	*1	*1	*1	*1	*1	4011	3.2	06-Jan-97
US	4	224	3	270	243	7454	221	50421	*1	*1	*1	43	129	58738	3.2	27-Jan-97
US	28	964	3	255	254	71	251	1	*1	*1	225	*1	*1	1057	3.3	22-Oct-97
US	28	965	3	90	*1	*1	90	*1	*1	*1	*1	90	270	450	3.2	15-Jan-97
US	28	967	3	73	*1	*1	71	*1	*1	*1	*1	73	238	382	3.3	05-May-97
TOTAL				2200	1695	33695	2035	168050	612	13998		523	1472	224147		

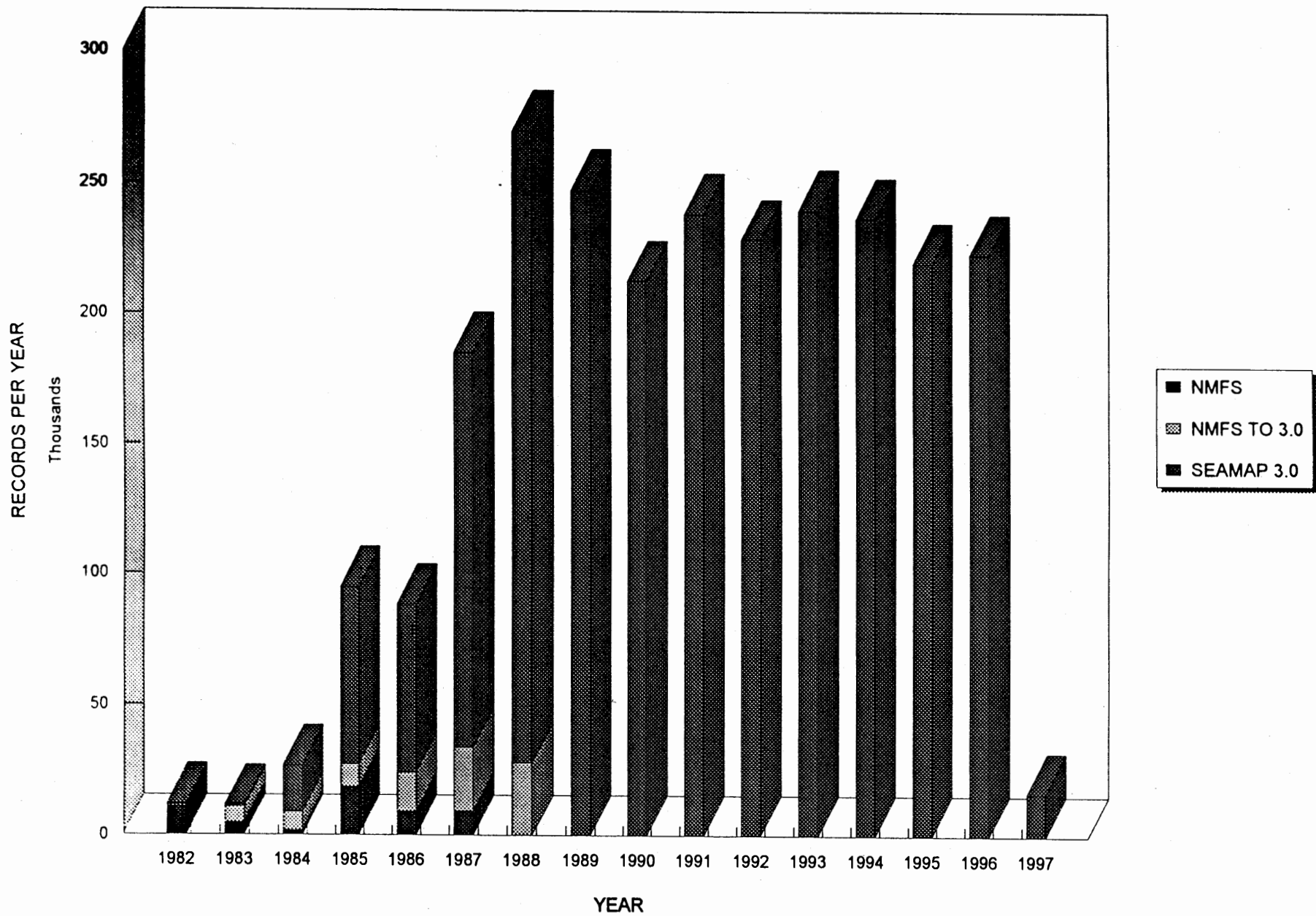
SEAMAP 1997

DATA SOURCE	VESSEL	CRUISE	INVENTOR STATUS	BIOLOGICAL STATION	SPECIES	ENVIRONMENTAL	GENERAL L/F	SHRIMP L/F STATION	L/F MERISTICS	STATIO	ICHTHYOPLANKTON SAMPLE	SPECIES	L/F	TOTAL	SEAMAP VERSION	DATE DBASED	
FL	28	971	3	18	*1	*1	18	*1	*1	*1	18	54	90	3.3	13-Jan-98		
LA	35	971	3	31	24	509	31	7188	15	188	*1	7	21	7987	3.3	22-Oct-97	
LA	35	972	3	31	24	433	31	3378	22	488	*1	7	21	4428	3.3	03-Feb-98	
LA	35	973	3	31	24	570	31	5862	23	324	*1	7	21	6886	3.3	24-Feb-98	
MS	17	971	3	41	39	888	41	8150	32	822	*1	2	8	7989	3.3	25-Nov-97	
SC	51	971	3	210	210	4652	210	9942	108	1274	*1	*1	*1	18806	3.3	15-Sep-97	
SC	51	972	3	158	158	2688	154	6763	63	1477	*1	*1	*1	11457	3.3	28-Oct-97	
SC	51	973	3	188	188	3245	188	4155	89	1245	*1	*1	*1	9278	3.3	21-Jan-98	
TX	31	971	3	18	18	251	18	1229	13	57	*1	*1	*1	1568	3.3	24-Feb-98	
TX	32	971	3	18	18	287	18	1730	12	102	*1	*1	*1	2159	3.3	24-Feb-98	
TX	33	971	3	18	18	192	18	534	9	34	*1	*1	*1	817	3.3	24-Feb-98	
TX	34	971	3	16	16	112	16	507	5	24	*1	*1	*1	886	3.3	04-Mar-98	
TX	40	971	3	16	16	157	16	620	10	318	*1	*1	*1	1153	3.3	24-Feb-98	
US	4	225	3	205	*1	*1	188	*1	*1	*1	187	559	952	3.3	13-Jan-98		
US	4	226	3	258	217	5950	215	40109	173	5366	*1	47	141	52429	3.3	04-Mar-98	
US	28	974	3	303	302	35	303	*1	*1	*1	152	*1	*1	1095	3.3	22-Oct-97	
US	28	975	3	123	*1	*1	94	*1	*1	*1	123	335	552	3.3	13-Jan-98		
TOTAL				1675	1264	19929	1584	88147	554	11719		152	398	1158	126182		

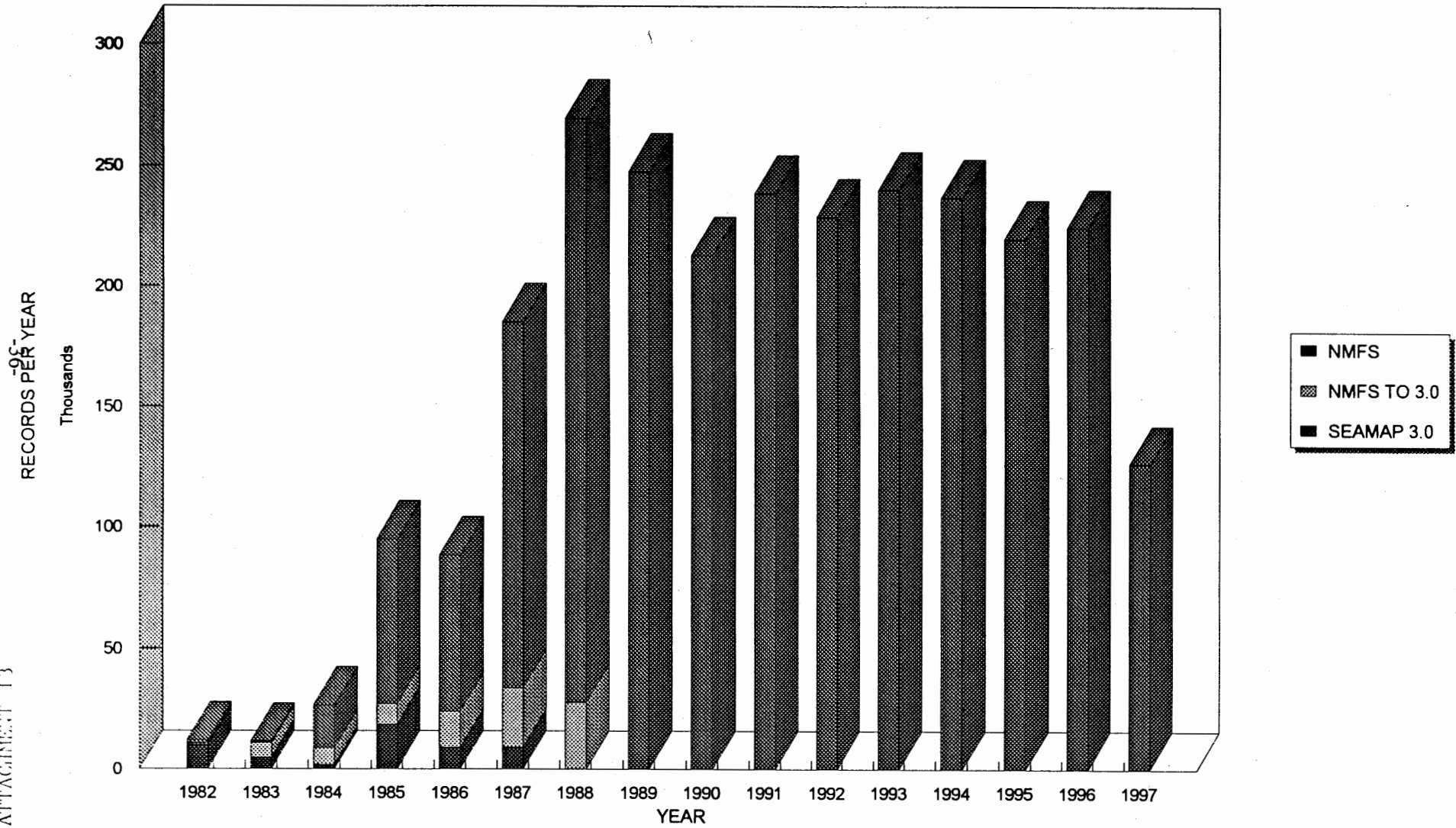
STATUS CODES:

*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



ATTACHMENT 13



Larry B. Simpson
Executive Director

GULF STATES MARINE FISHERIES COMMISSION

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

February 19, 1998

Memorandum

To: GSMFC TCC SEAMAP Environmental Data Work Group

From: David Donaldson, SEAMAP Coordinator *DD*

Subject: February 19, 1998 Conference Call Summary

Enclosed is a summary of the conference call held on February 19, 1998. Please review it and contact me with any changes. If there are any problems or questions, please do not hesitate to contact me.

enclosure

SEAMAP Environmental Data Work Group
Conference Call Summary
February 19, 1998

The conference call convened at 10:10 a.m. The following personnel were present:

Carmelo Tomas, FMRI, St. Petersburg, FL
Steve Heath, ADMR, Gulf Shores, AL
Rob Ford, NMFS, Pascagoula, MS
Joanne Shultz, NMFS, Pascagoula, MS
Michelle Kasprzak, LDWF, Baton Rouge, LA
Jim Hanifen, LDWF, Baton Rouge, LA
Richard Waller, GCRL, Ocean Springs, MS
David Donaldson, GSMFC, Ocean Springs, MS

The first order of business was to elect a new work group leader because Perry Thompson resigned from the Work Group. After discussion, **M. Kasprzak was nominated and elected work group leader**. Also, Rob Ford at NMFS, Pascagoula Lab, replaced Perry Thompson.

The next issue addressed by the group was the charge from the Subcommittee stating the work group should examine the quality of environmental data sets and historical use of the data, and develop recommendations for future acquisition that will meet the needs of data users and resource managers. Addressing the charge from the Subcommittee and developing a strategy was the main purpose of the conference call. D. Donaldson stated the Work Group must meet to address the issues raised by the Subcommittee. The group must identify the issues that need to be addressed as well as decide what materials will be needed to facilitate the discussions. After discussion, the group identified the following issues that will be addressed by the Work Group during the meeting:

- In-depth review of the Environmental section of the SEAMAP Operations Manual
- Discussion of potential problems with the historical environmental data and possible solutions for rectifying them
- Discussion of compilation of metadata

To help facilitate the discussion of these issues, the group decided the following information was needed:


- Compilation of environmental data collection methods for each participant
- Compilation of environmental gear codes used in the SEAMAP data set
- Compilation of the time lapse between the collection and processing of environmental data

- Feasibility of adding addition fields for gear codes in the data management system

Next, the group discussed the time frame and location for the meeting. It was noted that each state should be represented at this meeting since the group will be comparing collection methods and developing solutions to problems which affect all participants. Therefore, in addition to the Work Group membership, a representative from Texas should also attend this meeting. After discussions, the group decided that the meeting should be held on Tuesday, April 28, 1998 (1:00 - 5:00 p.m.) and Wednesday, April 29, 1998 (9:00 - 5:00 p.m.) in New Orleans, Louisiana.

There being no further business, the call was adjourned at 11:00 a.m.

**TCC DATA MANAGEMENT SUBCOMMITTEE
MINUTES
Tuesday, March 17, 1998
Destin, Florida**

APPROVED BY:

COMMITTEE

Chairman Skip Lazauski called the meeting to order at 8:40 a.m. The following members and others were present:

Members

Steven Atran, GMFMC, Tampa, FL
Page Campbell, TPWD, Rockport, TX
Skip Lazauski, ADCNR/MRD, Gulf Shores, AL
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, SEAMAP Program 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
Jeff Rester, Habitat Program Coordinator, Ocean Springs, MS

Others

Stewart Jacks, USFWS, Corpus Christi, TX
Joe Smith, NMFS, Beaufort, NC
Steve Branstetter, GSAFDF, Tampa, FL
Michelle Kasprzak, LDWF, Baton Rouge, LA
Steve Heath, ADCNR/MRD, Gulf Shores, AL
Tom Herrington, GOMP, Stennis Space Center, MS
Terry Cody, TPWD, Rockport, TX
Dalton Berry, Omega Protein, Hammond, LA

Adoption of Agenda

The agenda was approved with the following modification: add "Discussion of Data Collection Program for Estimating Effort in the Shrimp Fishery" after "State/Federal Reports".

Approval of Minutes

The minutes for the meeting held on October 14, 1997 in Gulf Shores, Alabama were approved as written.

State/Federal Reports

Florida - J. O'Hop reported that Florida is currently up-to-date with their trip ticket program. There have been some problems with the key punch/data entry contractor and Florida is working to resolve those problems. They are in the process of converting the data base into an Oracle format which will allow for a more powerful data management system. There are 8 port samplers working on the biostatistical program.

Currently, they are focusing on collection of striped mullet data. Also, there is some at-sea sampling being conducted. On the recreational side, Florida is involved in the charter boat pilot survey being conducted in the Gulf of Mexico as well as the NMFS head boat survey. Work on these surveys appears to be going well. Concerning the ACCSP, participants are currently developing an organizational structure for the program. They will be hiring a technical program manager to provide some guidance for the program. The group is discussing several issues such as who will be responsible for supervision, where the person will be located, etc. and is developing a process to address them.

Alabama - S. Lazauski reported that Alabama is continuing the collection of finfish and shrimp data and TIP data as well as monitoring the catches of red snapper for the quota. Alabama is currently developing a trip ticket system for the state. This system will be compatible with the system developed by ComFIN. The state is developing a budget for this activity. Alabama has begun its second year of the inshore creel survey. There are two components of the survey which include on the water interviews and overflights. The survey activities appear to be going smoothly. Alabama is also involved in the charter boat pilot survey being conducted in the Gulf of Mexico and work on this survey appears to be going well.

Mississippi - T. Van Devender stated the Department has moved to a new building and has hired about 40 new positions. Mississippi has increased its computer capabilities to include GIS mapping. Due to the high rainfall, the harvest of oysters has been fairly low. The legislature met from January to April, however, there were not many issues regarding fisheries discussion. The legislature did begin developing some limited entry language that will be discussed in the future. The Department was involved in Bonne Carré monitoring project which examined the effects of the introduction of freshwater from the spillway. The preliminary conclusions stated that the influx of freshwater has the larger impact on benthic organisms. The Wallop/Breaux money is continued to be used to fund a variety of projects regarding red drum, cobia, spotted seatrout, striped bass, etc. The Department is continuing its work with the Cooperative Statistics Program. Mississippi has one port agent that collects shrimp information in one coastal county and the NMFS provided two other agents to collect data in the other counties. Mississippi is in its ninth year of collection of recreational data via a creel survey. The tidelands fund is providing funding for a variety of projects. These projects are split between construction of marinas, harbors, etc. and research projects. Mississippi is involved in the charter boat pilot survey being conducted in the Gulf of Mexico and work on this survey appears to be going well. The Department has also developed and approved an artificial reef plan for Mississippi state waters.

Louisiana - J. Shepard reported that Louisiana is also participating in the charter boat pilot survey and data collection activities are going well. Louisiana has been working on updating the site register to ensure that all sites where charter boat activities occur are included. The pre-construction sampling has begun on the Davis Pond freshwater diversion project. And Louisiana has finally received funding for a trip ticket program and will be implementing a pilot trip ticket system this year. The pilot program will be implemented in July 1, 1998. This phase will consist of a small group of fishermen to work out the bugs in the system. Once all the problems have been addressed, full implementation of the program will occur in January 1, 1999. J. Shepard stated that he will present a more detailed description of the program later on the agenda.

Texas - P. Campbell reported that there have been several occurrences of brown and red tide events throughout Texas in the past several years. Because of these events, Texas conducted a workshop to discuss the issues concerning red tide. The Department, in conjunction with Texas A&M, are continuing a study to examine the occurrence of viruses in native shrimp in Texas. The collections will be in each bay system for one year and will collect approximately 2,000 samples to address this issue. Preliminary results have not detected any viruses in the wild stocks of shrimp. The Department is conducting the second phase of a bycatch reduction device (BRD) comparison study which will examine various types of BRDs to test their effectiveness. The Department is also continuing the second buy-back program for the shrimp fishery. The Department is paying \$3,600/license.

GMFMC - S. Atran reported that the Council is increasing the length of their meetings to allow for all the agenda items to be thoroughly discussed. The Council now has a web page. The address is: www.gulfcouncil.org. Also, the Council is currently working on two plan amendments. The first is the reef fish plan amendment. The Council is moving forward with the implementation of the electronic monitoring system for all vessels that use fish traps. They have published a control date for the recreational for-hire fishery for the purpose of limited entry. This control date is for the entire for-hire fishery, not any particular species. The other plan amendment is the mackerel plan. In this plan, it states that no recreationally caught mackerel can be sold and these fish should be counted against the recreational quota. There has been some legal challenges to the bycatch actions from Florida. At the upcoming Council meeting, the group will discuss finding a replacement for Phil Goodyear, who retired from the NMFS. They will also be discussing marine reserves and decided if the minimum size limit for king mackerel should be changed from 20 inches to 24 inches.

NMFS - J. Poffenberger reported that NMFS is undergoing a logbook transition from Beaufort to Miami. A new version of TIP data entry program is being tested and should be distributed later this month. As of January 1998, the TIP data base was not on the A7 and the new program takes advantage of the new system. One of the issues that has been discussed and decided, concerns the year convention for the year 2000. It has been decided that the new system will have 4-digit width. Each state needs to contact J. Poffenberger with their state's year format. The core statistics team continues to work on the vessel registration system (VRS) and fishery information system (FIS). He stated that NMFS has been mandated by Congress to develop these systems. NMFS has relied on the already-existing regional programs in the Gulf of Mexico, Atlantic and Pacific (RecFIN, ComFIN, ACCSP, PacFIN, etc.) to assist in the implementation of these systems. The VRS/FIS report has been targeted to be sent out by the end of the month.

Presentation of Gulf and South Atlantic Fishery Development Foundation Shrimp Effort Program

S. Branstetter stated that the Gulf and South Atlantic Fishery Development Foundation (GSAFDF) has been mandated by Congress to develop and administer a data collection program to enhance the understanding of shrimp effort and establish parameters for the red snapper stock assessment. The GSAFDF will work with the states to ensure that they are not "reinventing the wheel". There have been a multitude of meetings, workshops, etc. that have addresses and identified the issues concerning the collection of shrimp effort and red snapper, however, there has been very little done to fix these problems. The Foundation will convene two groups, one for shrimp effort and the other for red snapper, to begin developing answers to the identified problems. These groups will develop ideas and alternatives and implement data collection activities that will address the inadequacies and improve the data being collected. These groups will consist of state, federal, and commission personnel, as well as representatives from the industry and with focus on the technical aspects of these issues. Many of the issues that need to be addressed have been discussed by the Subcommittee and the Foundation will use the group's knowledge about the issues.

Presentation of Louisiana Trip Ticket Program

J. Shepard stated that Louisiana is currently in the process of testing their trip ticket program. The trip ticket program will collect trip level landings and define the sampling universe of commercial fishermen. From that, information about catch/effort, length frequencies, price and value, and other information can be collected. The LSU Cooperative Extension Service is currently developing coordinated dealer training workshops. These workshops will allow the dealers to have input into the design of the trip tickets, provide continued training and education of the dealers, and provide feedback on the various aspects of the program. J. Shepard reviewed the different types of trip tickets that can be used depending on what species were caught as well as the associated codes for the forms. The time frame for the program is January - March to seek dealer input into design of ticket, develop materials for education, finalize the design of the ticket, and distribute educational material (which will be an ongoing activity); April, the commission will take action

on the changes to the tickets; July, begin the trip ticket pilot program; September - November, conduct the workshops discussed earlier; and January 1999, the full implementation of the trip ticket program

RecFIN/ComFIN Issues

D. Donaldson stated that the ComFIN, FIN and RecFIN(SE) Committees met from February 23-25, 1998 in Orlando, Florida. During the meetings, the group discussed various issues including review of list of personnel with access to confidential data; discussion of periodic meetings of port samplers; development of a data collection document of commercial and recreational fisheries in the Southeast; discussion of Implementation Plan for ComFIN/RecFIN; review of the 1997 FIN Annual Report; update of Atlantic Coastal Cooperative Statistics Program (ACCSP); discussion of Vessel Registration System/Fishery Information System; discussions concerning non-hook and line fisheries, private access groups, night fishing, and fishing tournaments; various work group reports; and other pertinent topics.

D. Donaldson stated that the Gulf States and the NMFS are participating in a charter boat pilot survey in the Gulf of Mexico. He stated that there was a wave meeting March 4-6, 1998. Overall, the survey is going well. One of the activities for the charter boat survey is public outreach. The group is currently developing a brochure and a newsletter. One of the sections of the newsletter will be frequently asked questions. D. Donaldson asked the Subcommittee for some potential questions to include in the newsletter. After some discussion, the group came up with several questions including "Will you use this information to shut the fishery down?", "How can you estimate my catch if you don't ask me about what was caught?", and "Why should I participate in the survey?". These questions will be incorporated into the current and future charter boat newsletters.

Discussion of Fish Tagging Coordination

R. Lukens stated that the NMFS conducted a tagging workshop in January 1998 to discuss the development of cooperative, interactive tag registry/information sharing. This system is being proposed for the Atlantic coast but R. Lukens wanted to make the Subcommittee aware of the issue and determine if there was any interest in developing a similar system in the Gulf of Mexico. The Subcommittee discussed the issue and was interested in the system. They would like be updated on the progress of the system in the Atlantic and how well the system appears to be working. R. Lukens stated he will keep the Subcommittee informed.

Presentation of Script Writer Technologies

J. Fish presented the script writer technology. This technology will allow a field sampler to record the data in an electronic form which can reduce the number of data entry errors and data entry time lag. The pen based computers have the ability to collect data in the field and directly import this information into a database. You are about to design your own form to fit your data collection needs which enables a sampler to digitally capture the data, validate the data and save the data as an ASCII file. The equipment is designed to hold up in the outdoor environment and is capable of withstanding being dropped. The equipment has been designed to be used in the field. The Subcommittee was interested in the equipment for use in their data collection efforts. Texas is currently testing some of the equipment and will keep the Subcommittee informed about the equipment's performance. J. Fish stated he would send the GSMFC some spec sheets about the equipment and D. Donaldson would distribute it to the Subcommittee.


Other Business

D. Donaldson stated that many of the issues normally discussed by the Subcommittee are now being addressed during the ComFIN/RecFIN(SE) meetings. Therefore, there may not be a need for the Subcommittee to meet all day. The Subcommittee discussed this issue and decided that the Data

Management Subcommittee meeting should be shortened to a ½ day meeting. It was noted that if the need arose, the meeting could be expanded to a full day.

There being no further business, the meeting was adjourned at 4:00 p.m.

APPROVED BY:


COMMITTEE CHAIRMAN

**S-FFMC MENHADEN ADVISORY COMMITTEE
MINUTES
Tuesday, March 17, 1998
Destin, Florida**

J. Smith, Chairman, called the meeting to order at 1:35 p.m., after reaching a quorum with the following members in attendance:

Members

Joe Smith, NMFS, Beaufort, NC
Randy Rader, Omega Protein, Inc., Amelia, LA
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*)
Terry Cody, TPWD, Rockport, TX (*Proxy for Jerry Mambretti*)
Stevens Heath, ADCNR/MRD, Dauphin Island, AL (*Proxy for Vernon Minton*)

Others

Doug Vaughan, NMFS, Beaufort, NC
Patricia Tester, NMFS, Beaufort, NC
Tom Herrington, FDA/Gulf of Mexico Program, Stennis Space Center, MS
Richard Waller, IMS/USM/GCRL, Ocean Springs, MS
Gene Dismukes, Governor's Office, Montgomery, AL

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, Habitat Program Coordinator, Ocean Springs, MS

Introductions and Opening Comments

J. Smith welcomed everyone and started the introductions.

Membership Review

J. Smith indicated that substantial changes have occurred in the membership in the last year and opened the floor for comment regarding the membership roster. John Barnes is out of the fishery and no longer employed by AMPRO. Alex Chester has replaced Al Jones in the Miami NMFS lab and may be interested in taking Jones' place on the committee. L. Simpson pointed out that the "others" category was simply additional people who indicated interest in receiving MAC information but would check with A. Chester on it. The Omega Protein name changes have been made to the roster.

Adoption of Agenda

J. Smith suggested a change between items 7 and 8 to add the discussion of shark bycatch stemming from Richard Condrey's recent paper and newspaper articles. **C. Perret moved to accept the change and the motion passed.**

L. Simpson recommended the removal of item 11, *Report on Bait Fish Industry in Alabama*, due to the absence of V. Minton. The item will be taken up at the next meeting.

J. Smith suggested adding a brief overview of something he was working on for the LSU hypoxia workshop the previous week. He had compiled some of the catches from the net log data and combined it with LSU's data from the monitoring of the hypoxic-zone

Approval of Minutes

V. Guillory moved to accept the minutes from the October 14, 1997 meeting in Gulf Shores, Alabama. B. Wallace seconded and the motion passed.

Final Review of 1997 Gulf of Mexico Menhaden Fishing Season

J. Smith passed out a handout (Attachment 1) providing an overview of this and the next two agenda items. With respect to the 1997 review, actual landings in 1997 were 24% greater than the predicted landings which were forecasted in April. Final landings of Gulf menhaden for reduction totaled 611,217 mt, a 28% increase from the 1996 landings. This also marked a 15% increase from the previous five year average. This is impressive considering that only five plants operated on the Gulf in 1997. Other than Hurricane Danny in July and windy conditions in June and September, the weather was favorable in the northern Gulf. The hypoxic zone appeared later last summer than previous years probably due to the windy conditions in the spring. Coast wide, age-1 and age-2 fish were equally represented in the 1997 port samples at 46% each, age-3 menhaden comprised the remaining 8%.

1998 Gulf of Mexico Menhaden Fishing Season Forecast

Landings for 1998 (see Attachment 1) are predicted to be at least as good as 1997 with five plants and 51 vessels operating in the Gulf. The 1998 prediction is for 609,000 mt to be landed in the northern Gulf. The next year will be interesting with the by-outs in the reduction industry going into 1998.

The net log or CDFR data is continuing to be entered. So far, the 1994 through 1996 data has been computerized, and they are currently keying in the 1997 data. The new forms will be out by April 1.

There was discussion regarding the Marine Mammal Protected Species categorization of the menhaden fishery. It was explained that fisheries current level 3 is the least restrictive of the categories and that all fisheries are reviewed each year. Mandatory reporting exists for any encounters leading to injury or death of marine mammals. There is no possibility of uncatagorizing the menhaden fishery. After further discussion, it was suggested that a letter could be sent by L. Simpson to the Marine Mammals Protection Group to request a "heads up" should consideration be given to changing the categorical status of any Gulf fishery including menhaden. No action was required.

As a note, the menhaden fact sheet has been well received and copies are still being distributed. For additional pamphlets contact the IJF office.

Reporting - Confidentiality of 1998 Landings Reports

Changes in the fisheries on both coasts have led to big changes in the reporting of landings. In 1997, Zapata Protein purchased Gulf Protein in Morgan City leaving Omega and Daybrook in the Gulf. Zapata also purchased AMPRO in Reedville. In 1998 only Beaufort Fisheries and Omega Protein will remain on the Atlantic fishing 15 vessels. Now due to confidentiality, the three remaining companies have signed releases to continue to publish the landings data and offer it on the Fisheries Market News on the NOAA website under fish meal and oil reports (Attachment 2). The website address is on the top of the attachment.

The menhaden bait landings are not reported at this time, but measurements are taken opportunistically by the port samplers. Louisiana monitors the bait fishery in Louisiana but does not know what happens to the data when it reaches Washington, D.C.

Shark By-catch

There is a lot of interest in sharks as by-catch in the purse-seine fishery. The media has taken off with this "baby shark" report suggesting an impact to the summer nursery grounds by the menhaden fishery. A paper was submitted to the MAC by Condrey for review to be included as part of Janaka DeSilva's dissertation work. It is also to be submitted to the *North American Journal of Fisheries Management* for publication. Changes are already being implemented in 1998 by the menhaden fleet to further reduce the mortality associated with by-catch. Jeff Rester contributed some information regarding the work by Condrey in the last couple of years. Reviews of the document will be sent to Condrey and Janaka by April.

Status of GSMFC Data Collection Program

L. Simpson reported the changes to the funding process for the port sampling efforts. We have placed port sampling in our data collection cooperative agreement as one of the tasks which now are supported directly out of Rolland Schmitt's office in Silver Spring, Maryland. This should eliminate the problems we have had in the past couple of years. J. Smith indicated that this year the money is already in hand, and they should begin sampling in early May.

Status of Menhaden Stock Assessment

Doug Vaughan (NMFS, Beaufort N.C.) presented the latest update to the Gulf menhaden stock assessment and was happy to report that the fishery is doing well, is being fished well below MSY, and is showing a continued increase overall in biomass as effort is going down. SPR values are well within the values established as overfishing thresholds by the Gulf of Mexico Fisheries Management Council. Things look good for Gulf menhaden.

Demystifying *Pfiesteria*

Dr. Pat Tester (NMFS, Beaufort N.C.) presented to the MAC regarding the myths and inaccurate reports in the media about *Pfiesteria* and the other *Pfiesteria*-like-organisms. The thrust of her talk was how most of the things *Pfiesteria* is accused of are not new to scientists. ~~Red tide, brown tide, and other harmful algal blooms~~ are capable of producing the same impacts that *Pfiesteria* is credited with. Dr. Tester handed out a report to Congress which is considered to be the best information to date regarding *Pfiesteria* (Attachment 3).

Harmful Algal Blooms

fisherie →

FMP Revision Schedule

It was agreed that the revision should begin to be looked at and that S. VanderKooy would make the first cut through to evaluate some of the critical areas of expansion and would report to the MAC any homework they may need to provide by the October meeting. The Stock Assessment by D. Vaughan will be complete and can be incorporated into the revision as well. A completion date of fall 1999 was suggested.

Other Business

- Hypoxia Workshop

J. Smith introduced the background leading to his current work investigating the effects of hypoxia on the Gulf menhaden catches. A workshop on this topic occurred the week prior to this meeting at LSU, and J. Smith presented a brief look at some preliminary results comparing menhaden landings by month

using CDFR's or logbook data and the LSU location data of the Gulf hypoxic zone. The data suggests that we may see a corridor effect as menhaden leave the hypoxic zone and are captured close to shore in more norm-oxic areas in the late summer as the zone increases in size.

The next MAC meeting will be the third week of October (October 13-16) in San Antonio, Texas.

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

ATTACHMENT 1

<p>FORECAST FOR THE 1998 GULF AND ATLANTIC MENHADEN PURSE-SEINE FISHERIES AND REVIEW OF THE 1997 FISHING SEASON MARCH 1998</p>	<p>JOSEPH W. SMITH AND THE POPULATION DYNAMICS TEAM BEAUFORT LABORATORY SE FISHERIES SCIENCE CENTER NATIONAL MARINE FISHERIES SERVICE NOAA</p>
----------------------------------------------------------------------------------------------------------------------------------------------------	-------------------------------------------------------------------------------------------------------------------------------------------------------------------------

INTRODUCTION

The 1998 fishing year is the twenty-sixth 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 1998 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 (Fig. 1) have differed an average of 12 percent from those forecast for the twenty-five year period, 1973-97. Landings in the gulf menhaden fishery have differed from those forecast by an average of 17 percent for the same period.

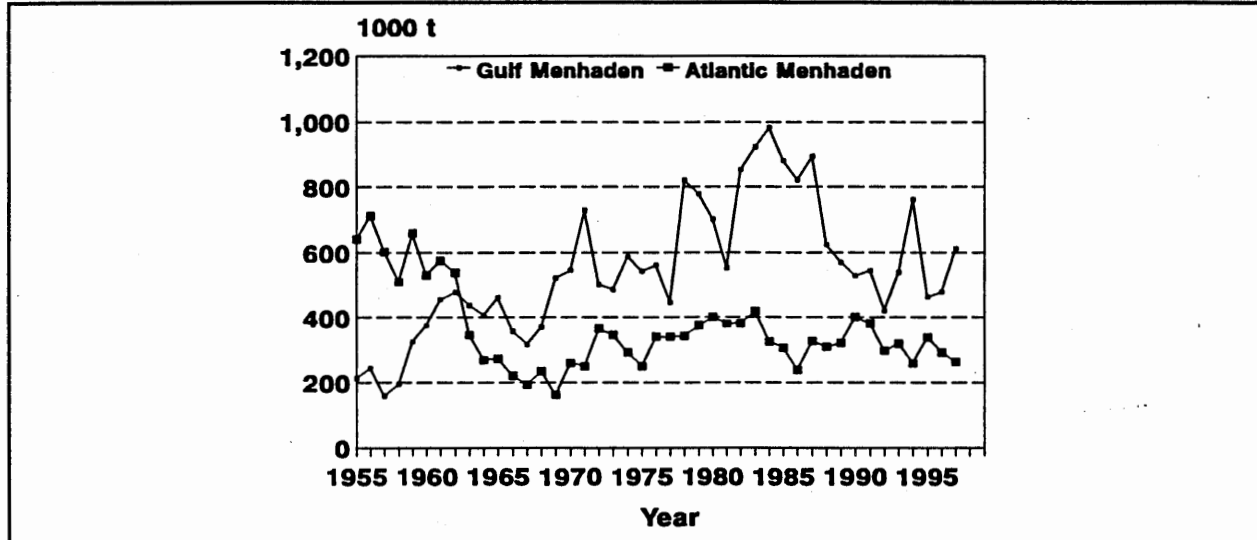


Figure 1 Gulf and Atlantic menhaden landings, 1955-97.

Gulf Menhaden Landings and Vessel Participation in 1997

Final landings of gulf menhaden for reduction in 1997 amounted to 611,217 metric tons (2,011 million "standard" fish). This is up 28 percent over total landings in 1996 (479,376 t), and up 15 percent from the previous five-year average (533,107 t) (Fig. 1 and Table 1). Landings in 1997 were impressive in light of the fact that only five reduction plants operated on the Gulf Coast. A sixth factory (at Dulac, LA) was closed after the 1995 fishing season, however, its landings (1992-95) are included in the totals for the previous five-year average.

Monthly landings during April (13,700 t) and May (78,100 t) 1997 lagged behind landings for respective months in 1996 (Fig. 2). Catches improved substantially in early June 1997. Monthly landings in 1997 peaked in June (119,300 t), then remained near the 110,000 t level through July (109,200 t), August (111,400 t), and September (116,900 t). Landings in October amounted to 64,300 t, and were the best for this month since 1993 (68,200 t), when two additional weeks were added to the traditional 26-week season.

As in 1996, five menhaden reduction factories operated on the Gulf Coast in 1997: Moss Point in Mississippi, and Empire, Morgan City, Intracoastal City, and Cameron in Louisiana. A total of 52 vessels reported unloading gulf menhaden for reduction in 1997, although two offloaded mostly for bait and two others were "tied-up" in mid-season.

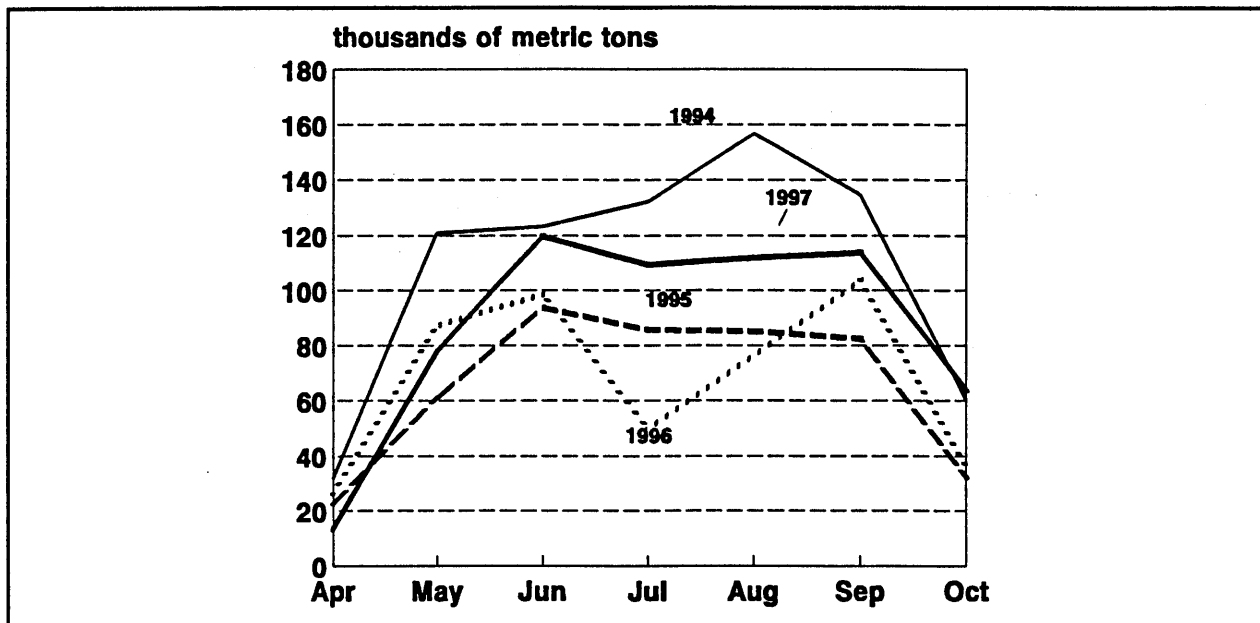


Figure 2 Gulf menhaden landings by month, 1994-97.

Except for a few sporadic events (Hurricane Danny in July, and windy conditions in late June and September), weather patterns in the northern Gulf of Mexico were generally favorable for purse-seine fishing during the 1997 gulf menhaden season.

Researchers from Louisiana State University again in summer 1997 mapped a large zone of oxygen-depleted waters, commonly called "the dead zone" off the coast of Louisiana. This summer's hypoxic zone formed later than previous summers, possibly due to windy conditions in spring. In 1997, the zone was also smaller than that mapped during the previous three summers.

Age Composition of the Gulf Menhaden Samples in 1997

A total of 9,890 gulf menhaden were aged from the 1997 port samples (Fig. 3). Coastwide, age-1 (46%) and age-2 (46%) gulf menhaden were equally represented, and together these age classes comprised 92 percent of the samples. Age-3+ fish (8%) rounded out the remainder of the samples. Age-1 fish predominated in samples from Moss Point (59%), Empire (71%), and Cameron (57%). Age-2 fish predominated in samples from Morgan City (64%) and Intracoastal City (56%).

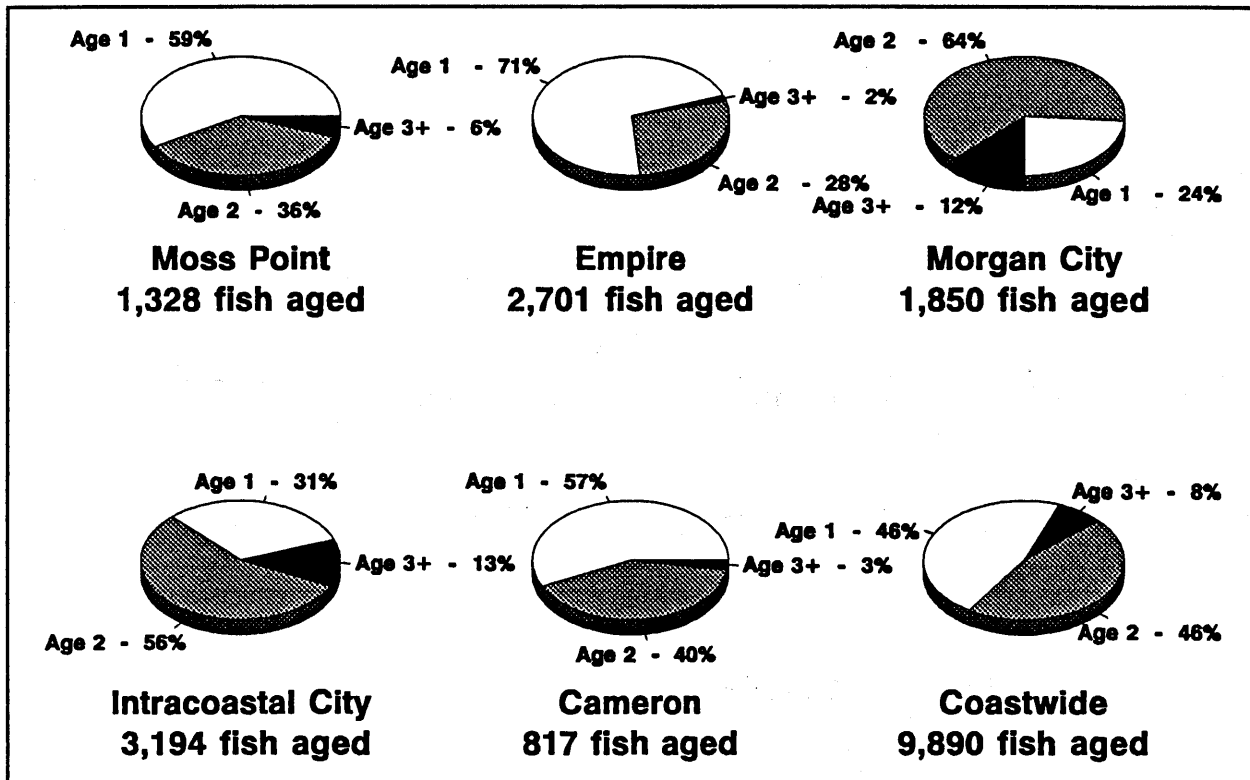


Figure 3 Age composition of gulf menhaden in 1997 port samples.

Fishing Effort in 1997 and Review of the 1997 Forecast

In Spring 1997 we anticipated that nominal fishing effort during the 1997 season could amount to 445,000 vessel ton weeks (with 51 vessels), and we forecasted 1997 gulf menhaden landings of 513,000 t with 80 percent confidence levels of 385,000 and 642,000 t. Nominal fishing effort amounted to 430,200 vessel ton weeks, slightly less than our March prediction. A "hindcast" using our forecast model and nominal fishing effort for 1997 produced a post-season forecast of 494,000 t (Fig. 4) with 80 percent confidence levels of 366,000 and 623,000 t. Actual landings in 1997 of 611,217 t were 24 percent greater than our April forecast.

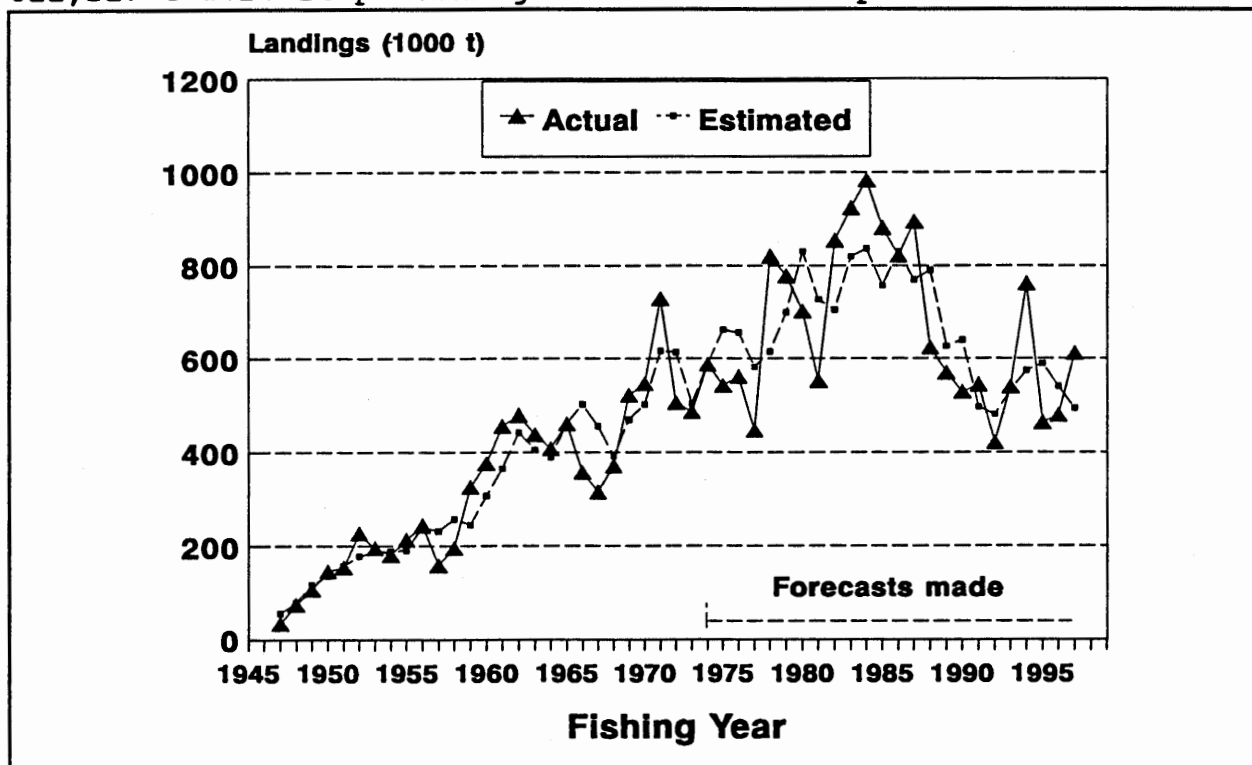


Figure 4 Gulf menhaden landings and forecasts, 1946-97.

Forecast of Gulf Menhaden Landings in 1998

During 1998, five menhaden factories will operate on the Gulf Coast, the same as in 1997. Our best estimate of vessel participation in 1998 is 51 vessels, similar to recent years. Based on average nominal fishing effort expended by these vessels during recent fishing seasons, we expect that nominal fishing effort in the 1998 gulf menhaden fishery may be about 462,000 vessel ton weeks. With this level of effort, our regression equation predicts 1998 gulf menhaden landings of 609,000 t, and chances are four out of five that they will be between 479,000 and 738,000 t (Fig. 5)

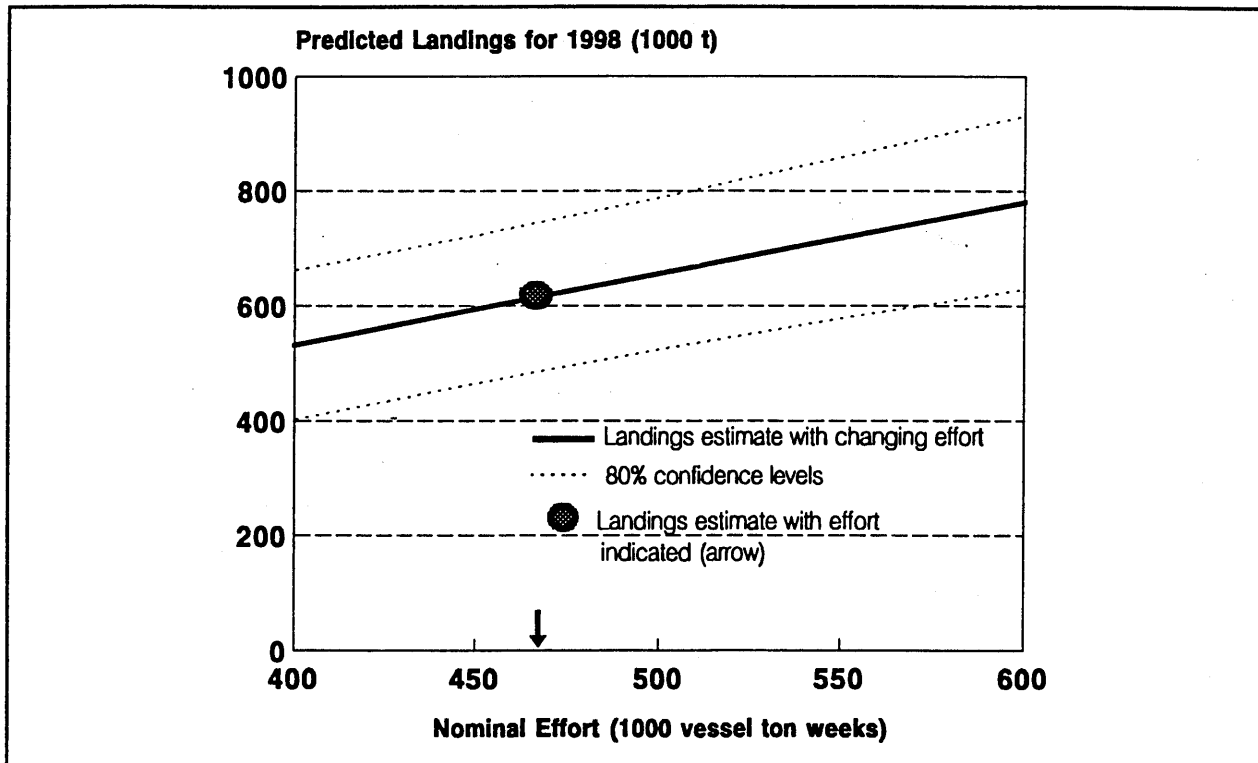


Figure 5 Forecast for the 1998 gulf menhaden fishery.

ATLANTIC MENHADEN FISHERY

Atlantic Menhaden Landings in 1997

Final catch information indicated that 1997 landings of Atlantic menhaden for reduction through February 1998 amounted to 262,700 t (864 million "standard" fish)(Fig. 1). This was ten percent less than purse-seine landings for the 1996 season (292,900 t), and 13 percent less than average landings for the previous five years (302,200 t)(Table 2).

As in 1996, three menhaden reduction factories operated on the Atlantic Coast in 1997: one in Beaufort, NC, and two in Reedville, VA. A total of 23 vessels reported unloading Atlantic menhaden for reduction in 1997, although two of these unloaded infrequently, one in summer and one in fall; 21 vessels reported landing fish in 1996.

Combined monthly landings through May and June 1997 (52,800 t) were nearly equivalent to landings through June 1996 (53,400 t). Through summer 1997, however, monthly landings in July (33,300 t), August (42,900 t), and September (34,500 t) lagged considerably below respective months for the 1996 season (Fig. 6).

Exceptionally cool and windy weather prevailed during May and early June, and as a consequence early season catches of Atlantic menhaden in Chesapeake Bay were poor. By mid-June the weather moderated and catches improved substantially. Catches off the southern coast of North Carolina were also good during June. Catches in Chesapeake Bay and off North Carolina were fair during July. Few fish were sighted in the Mid-Atlantic area during July and August, hence the Virginia fleet made few trips to the New Jersey coast during mid-summer. Fish were scarce in Chesapeake Bay during early August, but "showed" in good numbers through the latter half of the month. During late September and early October the Virginia fleet made numerous trips to the Mid-Atlantic coast. Also, exceptionally good catches of Atlantic thread herring (*Opisthonema oglinum*) off the North Carolina coast in September and early October may have produced record reduction landings for this member of the herring family.

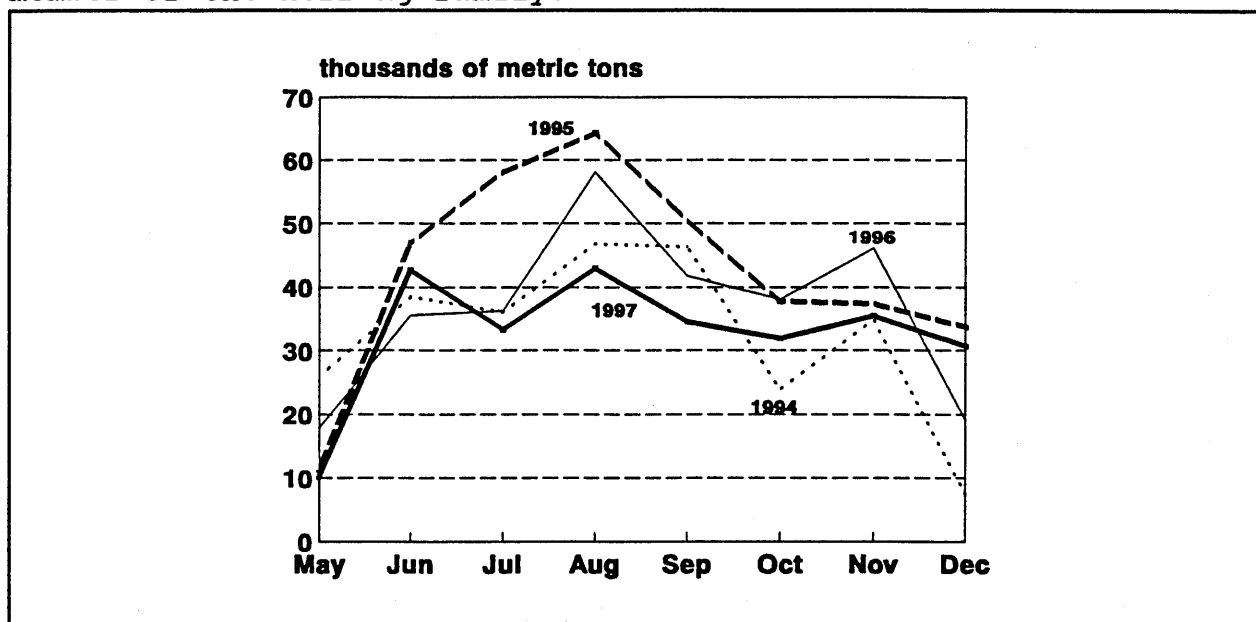


Figure 6 Atlantic menhaden landings by month, 1994-97

Fall fishing off the North Carolina coast commenced with good catches in mid-November near Cape Hatteras and Ocracoke. By Thanksgiving, the Virginia fleet made exceptionally good catches off the mouth of Chesapeake Bay near Cape Henry. The North Carolina vessels fished on large schools of fish in the vicinity of Cape Lookout and Beaufort throughout December, while the Virginia fleet continued to fish in early December near Cape Henry, with some activity off the northern North Carolina coast. The Virginia factories "cut-out" by mid-December, while vessels from North Carolina continued to fish through Christmas. A few sporadic catches were made in late January and early February near Beaufort Inlet.

Age Composition of the Atlantic Menhaden Port Samples in 1997

A total of 3,650 Atlantic menhaden were aged from the 1997 port samples (Fig. 7). Age-2 (45%) Atlantic menhaden predominated in the coastwide port samples, followed by age-3 (31%) and age-4+ (8%) fish. Age-1 Atlantic menhaden comprised 14 percent of the coastwide samples. Port samples from Chesapeake Bay in summer were similar to the coastwide age distributions with age-2's (51%) predominating over age-3's (35%) and age-4+'s (9%). Off the Mid-Atlantic coast, age-2's (51%) predominating over age-3's (35%) and age-4+'s (9%). Off the Mid-Atlantic coast, age-2 (47%) and age-3 (34%) Atlantic menhaden predominated in the samples, while age-4+ (19%) were well represented. Along the North Carolina coast in summer, age-2 (87%) fish predominate over age-1's (10%). In the fall fishery (November and December), age-1 fish (45%) were the dominant age group, followed by age-3's (31%), age-2's (12%), and age-4+'s (7%); age-0's, or "peanuts" comprised only 5 percent of the fall samples.

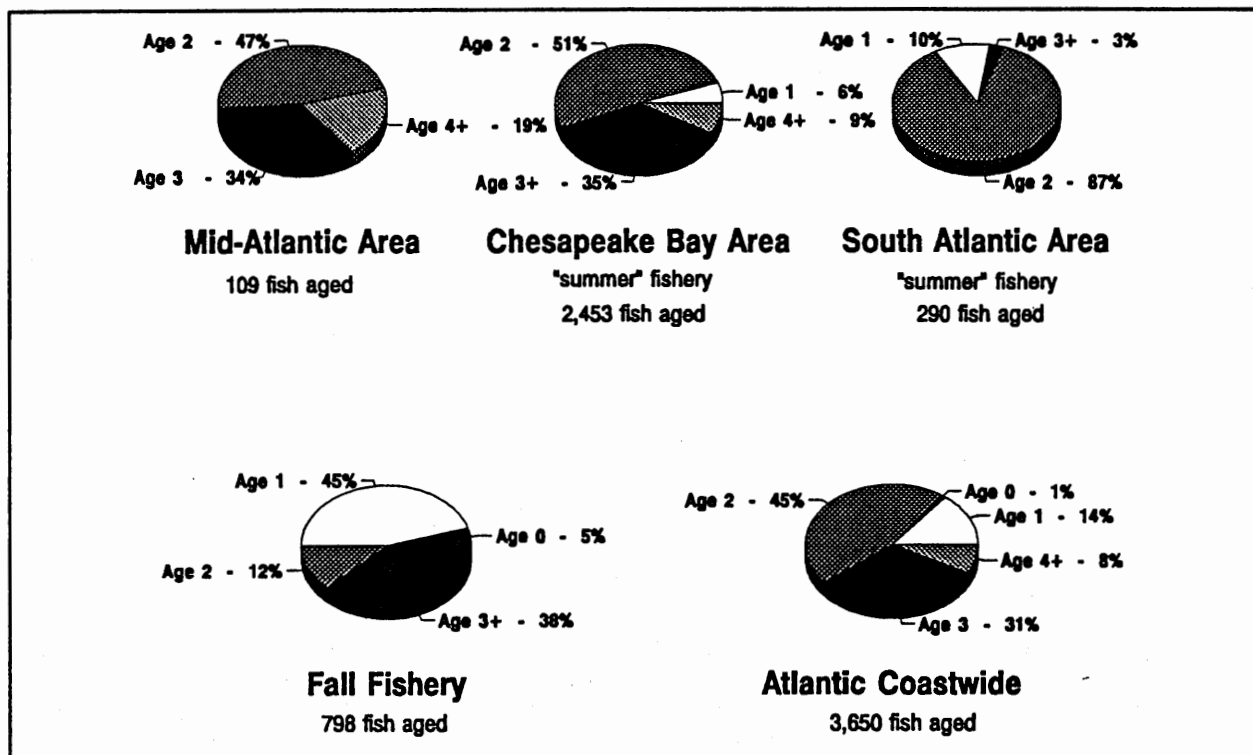


Figure 7 Age composition of Atlantic menhaden in the 1997 port samples.

Fishing Effort in 1997 and Review of the 1997 Forecast

A total of 23 vessels offloaded Atlantic menhaden for reduction during 1997. Nominal or observed fishing effort in the Atlantic menhaden fishery for 1997 amounted to 618 vessel weeks; this was up from 528 vessel weeks in 1996.

Our formal forecast last spring predicted 1997 Atlantic menhaden landings of 305,000 t based on an estimate of 590 vessel weeks of fishing effort. According to the historical (1940-96) relation of landings and effort for the Atlantic menhaden fishery (Fig. 8), observed effort of 618 vessel weeks produces a post-season "hindcast" of 310,000 t with 80 percent confidence levels between 238,000 and 383,000 t. Actual landings of 262,700 t were 15 percent less than those hindcast by our regression equation.

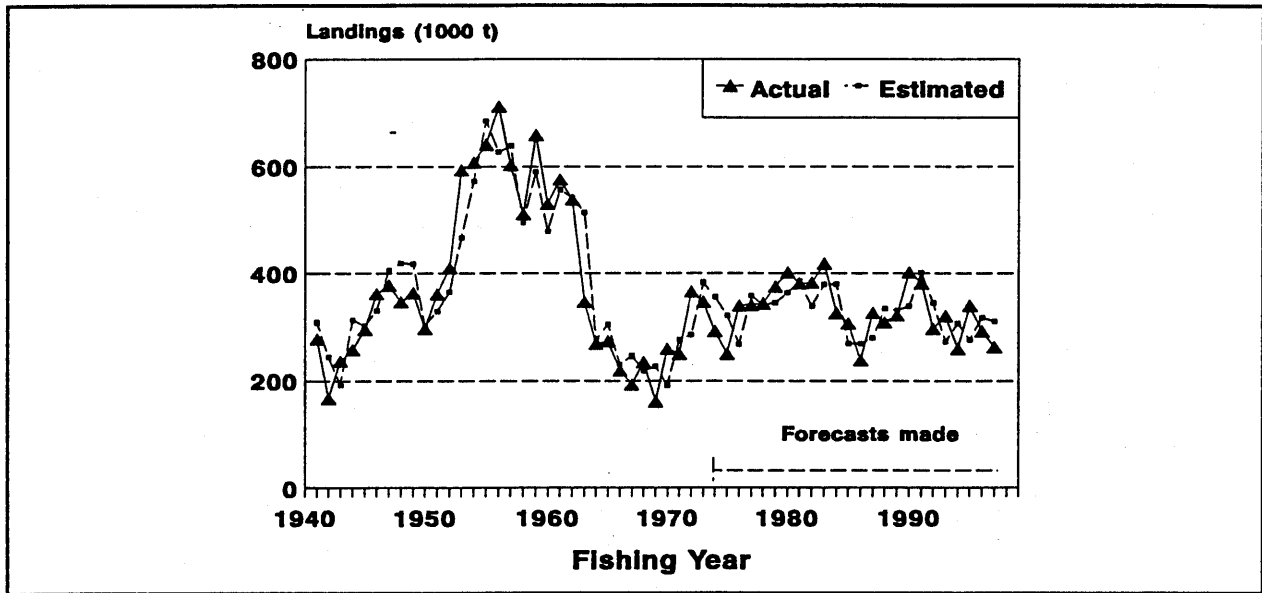


Figure 8 Atlantic menhaden purse-seine landings and forecasts, 1941-97.

Forecast of Atlantic Menhaden Landings in 1998

As a consequence of the consolidation of the two extant Virginia menhaden factories in fall 1997, only one menhaden factory will operate at Reedville, VA, during 1998. Whereas in 1997, two Virginia factories fielded a fleet of 20 vessels, we expect that the single remaining factory in Reedville will fish only 13 vessels in 1998. This represents a 35 percent reduction in the Virginia menhaden fleet for 1998. With only two vessels active at the Beaufort menhaden plant, total fleet size in 1998 will be 15 vessels.

Based on historical performance of the 15 vessels that we expect to be active in the 1998 Atlantic menhaden fishery, we estimate that nominal fishing effort in 1998 will be about 460 vessel weeks. If our estimate is accurate, it would be the least amount of effort expended in the fishery since 1986 (Table 2). With 460 vessel weeks of effort, we predict purse-seine landings of 242,000 t in the 1998 Atlantic menhaden fishery (Fig. 9) and chances are four out of five that they will be between 169,000 and 314,000 t.

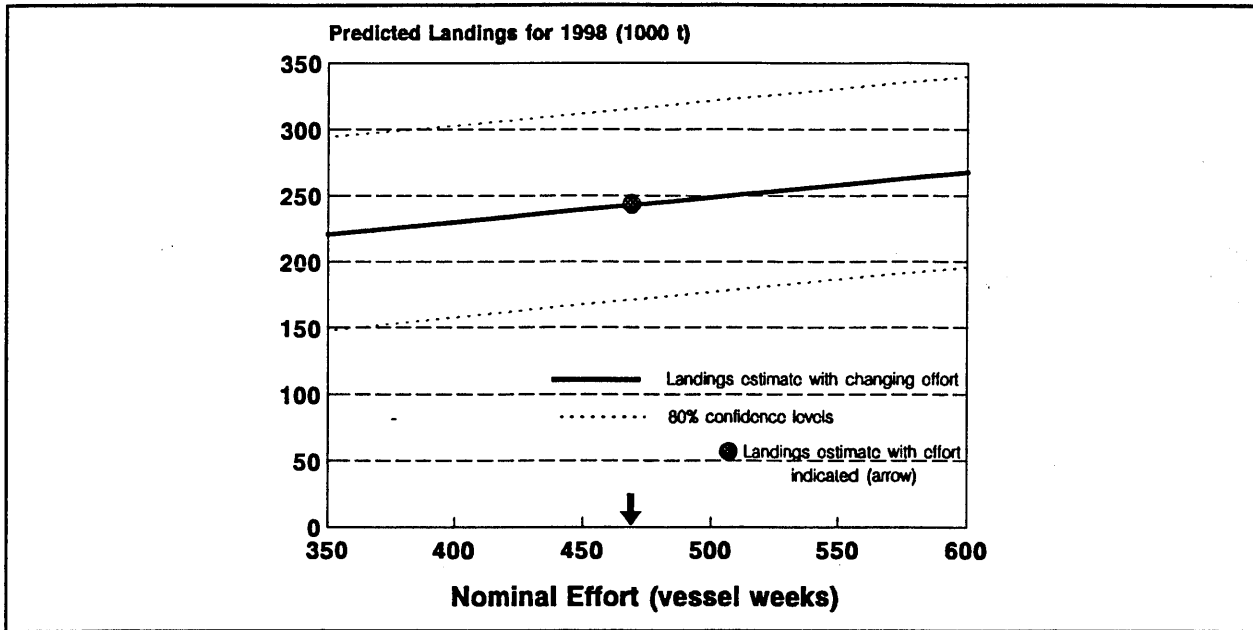


Figure 9 Forecast for the 1998 Atlantic menhaden fishery.

COMBINED 1997 GULF AND ATLANTIC MENHADEN LANDINGS

Combined landings of gulf and Atlantic menhaden purse-seine fisheries for reduction during the 1997 calendar year amounted to 1.94 billion pounds. Menhaden landings during the 1996 calendar year were considerably less at 1.69 billion pounds. A comparison of menhaden landings to total U.S. domestic commercial fisheries landings for 1997 is not possible because the latter value is unavailable. Nevertheless, the contrast for the calendar years 1970-96 is shown in Figure 10.

UPDATE ON CAPTAINS DAILY FISHING REPORTS (CDFRS)

Since January 1992, NMFS personnel have been digitizing Captain's Daily Fishing Reports (CDFRs) into data bases on personal computers. Twelve years of Atlantic menhaden CDFRs (1985-96) for the Virginia and North Carolina fleets have been keyed and edited. The data bases have been extremely helpful in answering management-related questions, such as, number of sets and catch by distance from shore, especially off the Virginia and North Carolina coasts. Gulf menhaden CDFRs for 1994-96 have been key-entered and edited. Limited analyses of catch, number of purse-seine sets, and average catch-per-set within 10x10 minute geographic cells have been made. The 1997 CDFRs from both coasts are currently being key-entered and edited.

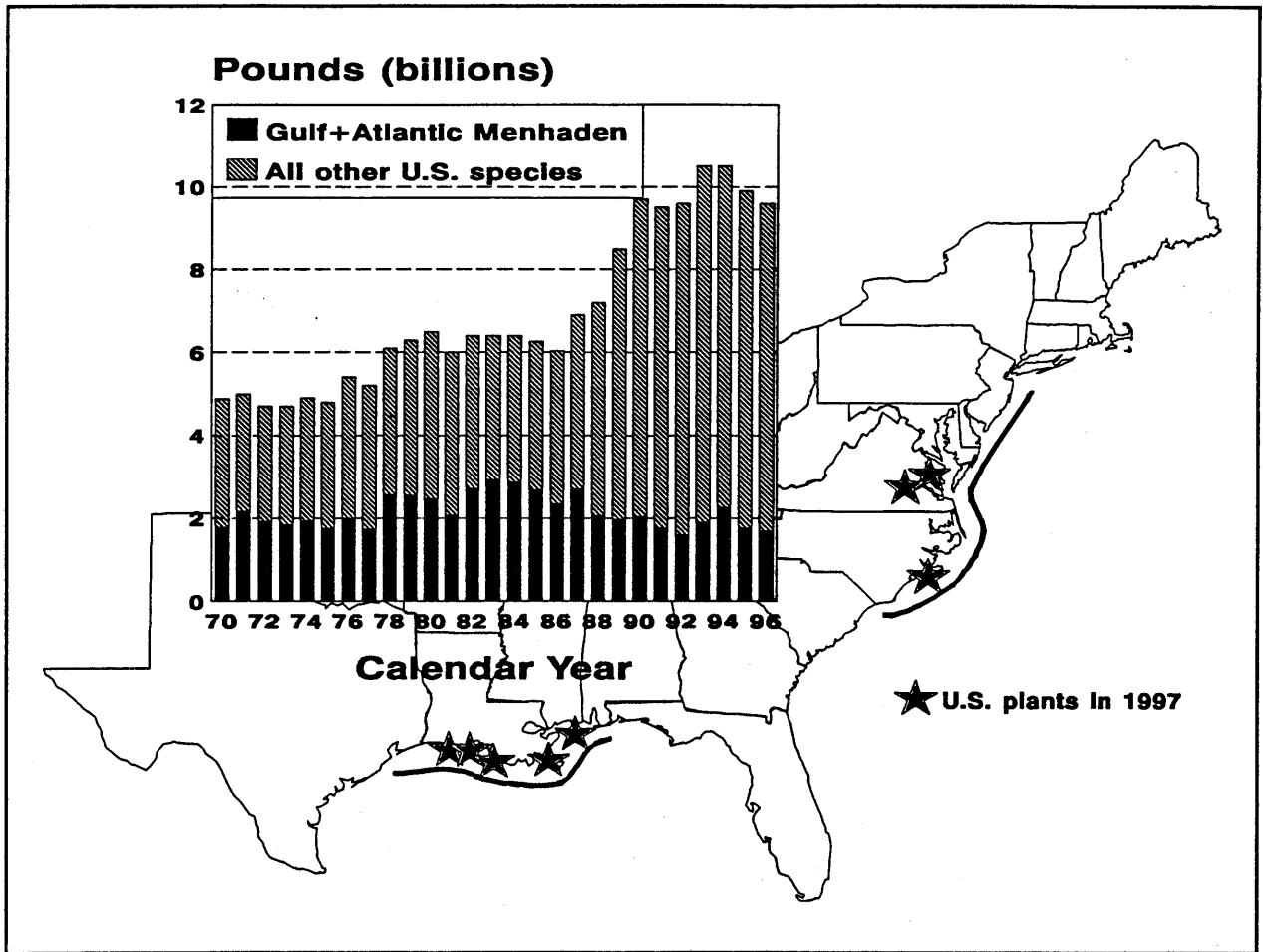


Figure 10 Gulf and Atlantic menhaden contributions to total U.S. commercial fisheries landings during the calendar year.

Table 1 Fishing effort and landings in the gulf menhaden purse-seine fishery, 1955-97.

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

Table 2 Fishing effort and landings in the Atlantic menhaden purse-seine fishery, 1955-97.

Year	Fishing effort (ves-wks)	Landings (1000 metric t)	Year	Fishing effort (ves-wks)	Landings (1000 metric t)
1955	2748	641.4	1976	1163	340.5
1956	2878	712.1	1977	1239	341.1
1957	2775	602.8	1978	1210	344.1
1958	2343	510.0	1979	1198	375.7
1959	2847	659.1	1980	1158	401.5
1960	2097	529.8	1981	1133	381.3
1961	2371	575.9	1982	948	382.4
1962	2351	537.7	1983	995	418.6
1963	2331	346.9	1984	892	326.3
1964	1807	269.2	1985	577	306.7
1965	1805	273.4	1986	377	238.0
1966	1386	219.6	1987	531	327.0
1967	1316	193.5	1988	604	309.3
1968	1209	234.8	1989	725	322.0
1969	995	161.6	1990	826	401.2
1970	906	259.4	1991	926	381.4
1971	897	250.3	1992	794	297.6
1972	973	365.9	1993	626	320.6
1973	1099	346.9	1994	573	260.0
1974	1145	292.2	1995	600	339.9
1975	1218	250.2	1996	528	292.9
			1997	618	262.7

http://remora.ssp.nmfs.gov/market_news/index.html

MAC 3/17/98 (2)

NATIONAL MARINE FISHERIES SERVICE FISHERY MARKET NEWS

Mailbox 200

FAX: (301) 713-1415

Doc. 44

UPDATE ON October 9, 1997

Page 1

FISH MEAL MARKET 10/7/97

U.S. wholesale quotations and market conditions are provided by brokers, importers, or producers on a current trading basis. Prices are f.o.b. plants indicated.

MEAL

Prices are reported in dollars per short ton with percentage of protein content and in dollar per unit protein in parentheses representing equivalent prices.

Domestic

MENHADEN: Bulk 60%:

NEW YORK: Sup lt- gd, dem fair, mkt firm,
East Coast & Gulf 545(9.08).

BOSTON: None reported.

NEW ORLEANS: Sup mod, dem mod, mkt strong.
East Coast & Gulf 525-540(8.75-9.00).

Imported:

ANCHOVY: Bulk 64%:

NEW YORK: No supply or quotes.

NEW ORLEANS: Peru & Chile, no supply or quotes.

HERRING: Bulk 70%:

BOSTON: None reported.

OIL

Prices are listed in cents per lb.

MENHADEN:

NEW YORK: Sup lt, dem gd, mkt gd,
East Coast & Gulf 22-24 cents.

NEW ORLEANS: Sup gd-mod, dem gd, mkt strong,
East Coast & Gulf 26 cents.

SOLUBLES

Prices are listed in dollars per short ton.

MENHADEN:

NEW YORK: Sup gd-mod, dem mod, mkt strong,
East Coast & Gulf 200-270.

NEW ORLEANS: Sup mod, dem mod, mkt mod,
East Coast & Gulf 200-225).

Source: National Marine Fisheries Service, New Orleans, LA



CURRENT FISHERIES STATISTICS NO.9608

Fish Meal and Oil, July - September 1996

PRODUCTION OF MEAL, JULY - SEPTEMBER 1995 AND 1996					
Month	Menhaden (1)	Tuna	Other	Shellfish	Total
-----Metric Tons-----					
Calendar Year 1995					
July	40,890	2,372	1,043	1,021	45,326
August	35,199	2,442	7,502	746	45,889
September	37,068	2,214	15,211	465	54,958
Total.....	113,157	7,028	23,756	2,232	146,173
Jan.-Sept...	169,695	22,041	54,708	5,010	251,454
Annual Total	204,356	29,278	61,304	6,040	300,978
Calendar Year 1996					
July	22,517	2,106	936	(2)	25,559
August	31,570	2,325	5,798	(2)	39,693
September	35,846	2,039	12,598	(2)	50,483
Total.....	89,933	6,470	19,332	(2)	115,735
Jan.-Sept...	158,058	18,583	46,071	(2)	222,712

PRODUCTION OF SOLUBLES AND OILS, JULY - SEPTEMBER 1995 AND 1996					
Month	Fish Solubles		Fish Oils		Total
	Total	Menhaden	Other	Total	
-----Metric Tons-----					
Calendar Year 1995					
July	19,030	18,375	36		18,411
August	11,224	21,447	34		21,481
September	15,450	26,279	436		26,715
Total.....	45,704	66,101	506		66,607
Jan.-Sept...	68,681	91,369	1,090		92,459
Annual Total	80,712	108,029	1,713		109,742
Calendar Year 1996					
July	13,461	12,305	33		12,338
August	22,314	21,820	12		21,832
September	17,565	26,522	288		26,810
Total.....	53,340	60,647	333		60,980
Jan.-Sept...	91,859	92,615	458		93,073

(1) May include a small quantity made from other species. (2) Not available on a monthly basis.
 Note: The above data includes production in American Samoa and Puerto Rico.
 Data for 1995 are final. Data for 1996 are subject to revision.

CRS Report for Congress

Pfiesteria and Related Harmful Blooms: Natural Resource and Human Health Concerns

December 8, 1997

Eugene H. Buck, Claudia Copeland, and Jeffrey A. Zinn
Senior Analysts
Environment and Natural Resources Policy Division

Donna U. Vogt
Analyst
Science, Technology, and Medicine Division



Congressional Research Service • The Library of Congress



Pfiesteria and Related Harmful Blooms: Natural Resource and Human Health Concerns

Summary

Congress, federal agencies, and affected states are seeking to better understand *Pfiesteria piscicida* (a recently identified species of dinoflagellate) and related species, whose blooms release toxins that can harm fish and possibly human health under certain conditions. Although menhaden, an industrial fish used primarily in fishmeal and oil production, is the dominant species observed to have been killed by these organisms, consumers have reduced their purchases of Chesapeake Bay seafood after extensive media coverage highlighted toxic events. Both the water- and lipid-soluble toxins of *Pfiesteria* and related species have been blamed for adverse health effects in people who have come in contact with affected waters.

Many scientists believe that nutrient enrichment of waters plays a role in *Pfiesteria* outbreaks, but the exact mechanisms are unclear. Some agricultural activities, especially large livestock facilities, are concentrated sources of nutrients, which can leach into ground and surface waters. In Maryland, phosphorus from these sources has attracted considerable attention, because it is often the limiting factor whose increase encourages blooms of aquatic organisms such as *Pfiesteria*. However, agricultural interests believe that this attention unfairly singles out agriculture, and they are investigating alternative explanations. Most agree that more investigation is required to develop a better understanding of the role of nutrient pollution. In affected watersheds, agricultural agencies and interests are both collecting information to characterize current farming enterprises and conservation accomplishments more fully and increasing staff and financial resources to work with farmers on reducing nutrient concentrations.

While individual states seek to address concerns and determine how to mitigate associated impacts, Congress and federal agencies are considering how best to assist state efforts. Federal and state governments have funded surveillance efforts as well as research into testing and characterization of the toxins and their effect on human health. Reauthorization of the Clean Water Act, which could occur in the 2nd Session of the 105th Congress, may give policymakers opportunities to consider what role that Act might play in addressing *Pfiesteria*-related and similar water quality problems. Legislative attention to research and related topics also could occur.

Although initially it appeared easy to assume that *Pfiesteria* or related organisms were the problem and that agricultural practices were the cause, state and federal agencies are examining a broad array of causes and remedies. One example of a broad approach to these problems is provided in the November 1997 report by the Blue Ribbon Citizen's *Pfiesteria* Action Commission to Maryland Governor Parris Glendening, which will be the basis for further actions by the Maryland Legislature.

Contents

Introduction	1
What is <i>Pfiesteria</i> ?	2
<i>Pfiesteria</i> -Complex Organisms — Interactions with the Environment and Human Health	3
Water Quality Conditions and <i>Pfiesteria</i>	3
Living Aquatic Resources	4
Human Health	4
What has Been the Response to <i>Pfiesteria</i> ?	5
State Response	5
Maryland	5
North Carolina	7
Virginia	7
Other States	8
Interstate Cooperative Efforts	8
Federal Response	8
Elements of the Federal Response	8
Other Specific Elements of the Federal and Congressional Response	10
Policy Questions	13
Water Quality Management Issues	13
Agricultural Issues	14
Human Health Issues	16
Fisheries and Estuarine Ecosystem Issues	17
Estuarine Ecosystem	17
Commercial Fishing	18
Retail Seafood	18
Recreation and Tourism	18
A Larger View	19
Selected Sites About <i>Pfiesteria</i> on the World Wide Web	20
Federal	20
State	20
Academic	20
Other Miscellaneous	21
Selected References	21

Pfiesteria and Related Harmful Blooms: Natural Resource and Human Health Concerns

Introduction

Even with widespread implementation of several programs to protect and improve water quality in coastal waters, there has been an increase in the frequencies, virulence, and geographic extent of toxic blooms¹ of planktonic marine organisms, and increased biomass of non-toxic blooms has become apparent along the whole U.S. coastline, including Alaska and Hawaii, during the 1990s. So-called "red tides" by *Gymnodinium* dinoflagellates have caused fish and marine mammal mortalities offshore of many states, while increased algal growth off the mouth of the Mississippi River annually produces a massive anoxic zone, devoid of most marine life. While the problems of harmful blooms appear to be widespread and possibly increasing, this report focuses specifically on the more recent concerns with *Pfiesteria*-like species in the mid-Atlantic region. These concerns have attracted congressional interest -- House subcommittee hearings, specific FY1998 appropriations provisions, and as justification for several general legislative proposals.

Major fish kills have been attributed to *Pfiesteria piscicida*, a species of dinoflagellate (a group of aquatic, motile, single-celled, planktonic organisms), in North Carolina (primarily in the estuaries of the Neuse and Pamlico Rivers) since the early 1990s. While a 1996 fish kill at a Maryland fish farm was associated with *Pfiesteria piscicida*, other *Pfiesteria*-like organisms have been identified in Maryland, Delaware, Virginia, South Carolina, and Florida. Other than the Maryland fish farm, however, scientists have not yet validated the reports of *Pfiesteria* in the wild in these other states. Dinoflagellate species similar to, and easily confused with, *Pfiesteria* have been identified in some of these areas, including the Pocomoke River in Maryland. Fish kills in these east coast estuaries usually were associated with hot summers and periodic, brief, heavy rains within the middle and lower portions of coastal river watersheds. Lesions on estuarine fish, particularly in menhaden, have been documented from New York to Florida since the early 1980s. Although some have suggested that instances of ulcerative mycosis (fungal lesions) in mid-Atlantic menhaden during the mid-1980s may have been caused or influenced by *Pfiesteria*-like organisms,² this is conjecture and has not been proven. Because lesions are non-

¹ A "bloom" is an event involving extremely rapid population growth by a species of drifting (*i.e.*, planktonic) aquatic organism. During a bloom, an organism that otherwise is seldom noticed because of its microscopic size may impart a color to the water (*e.g.*, a "red" tide) by its abundance.

² Fungal lesions may be a secondary opportunistic response to skin lesions caused by *Pfiesteria* toxins.

specific and can be caused by a number of mechanisms, lesions alone are insufficient to indicate *Pfiesteria* exposure.

It has been puzzling to some that no associated mortalities have been reported of animals (*e.g.*, gulls, terns, cormorants, marine mammals, racoons, turtles) that inhabit the same estuaries and may feed on dead or infected fish. In addition, no symptoms of respiratory distress, neuromotor function impairment, wasting, sores or lesions, or general unkempt appearance have been reported in these other animals, which would almost certainly have been exposed to any airborne toxins and contaminated water and/or ingested contaminated fish. This absence of symptoms raises questions about the virulence of the toxins as well as the range and duration of potential impacts, since dinoflagellate red tides have been observed to cause distress and mortality widely in affected ecosystems.

What is *Pfiesteria*?

Pfiesteria piscicida, discovered in 1988 in a laboratory fish tank and formally identified and named in 1996, was identified from fish kill areas in the estuaries of the Pamlico and Neuse Rivers of North Carolina in 1991. Dr. JoAnn Burkholder, an associate professor at North Carolina State University, has focused much of her recent work on characterizing this organism. *Pfiesteria piscicida* has a complicated life cycle involving as many as 24 different physical forms, with the ability to transform quickly (*i.e.*, within minutes to hours) from one form to another. While most forms are non-toxic, some life stages release toxins that have been blamed for fish kills and implicated in human illness in North Carolina. At least two different toxins have been identified as released by this organism, a fat-soluble toxin that causes skin lesions and a water-soluble toxin that is neurotoxic.

Identification of *Pfiesteria*-like organisms is difficult, requiring special treatment of the organism's cells and viewing under a scanning electron microscope (SEM). However, few laboratories have the equipment and experience necessary to perform this identification. A number of dinoflagellate species in possibly several genera — a "*Pfiesteria* complex" of morphologically similar species — may occur together and be responsible for the *Pfiesteria*-like fish mortality events. SEM has not always revealed the presence of *Pfiesteria* in samples identified as positive by toxicity bioassay procedures.³ In addition, this organism's ability to transform quickly between non-toxic and toxic forms has made it difficult to identify the organism causing specific toxic events. Several similar species may act like *Pfiesteria*, inducing a positive response in toxicity bioassays, but are not recognizable as *Pfiesteria* under SEM. Several investigators, using SEM, suggest that some of the toxic events may

³ A toxicity bioassay involves placing a suspect water sample in an aquarium containing fish, and waiting to see if the dinoflagellate organisms reproduce and induce the characteristic lesions and death in the fish. This procedure may require as long as two weeks to complete. While a toxicity bioassay may confirm the toxicity of a sample, it may not be conclusive as to a cause and effect relationship between the organism in the sample and the toxic episode in the waterway coincident with sample collection.

be caused by dinoflagellates of a new unidentified genus, possibly related to *Peridiniopsis*.⁴

***Pfiesteria*-Complex Organisms — Interactions with the Environment and Human Health**

Water Quality Conditions and *Pfiesteria*

Pfiesteria-like dinoflagellates exist over extensive environmental and geographic ranges. They have a wide salinity tolerance for both freshwater and seawater, as well as wide temperature tolerance. Optimum conditions for *Pfiesteria* and related species are shallow, brackish, slow-moving waters, typically found in estuaries; temperatures of about 75 degrees F.; and an abundance of fish. These conditions change seasonally; hence, toxic outbreaks tend to occur in spring and summer months. Scientists believe that these organisms are present at all times in estuarine waters where they have been found, but become active, and potentially toxic, only under certain conditions.

Nutrient (nitrogen and phosphorus) enrichment of the waters may play a role in *Pfiesteria* outbreaks, but the mechanisms are unclear. For example, some scientists believe that, at certain points in its life cycle, *Pfiesteria* can be stimulated directly by dissolved organic nutrients derived from human and animal wastes (sewage and manure). *Pfiesteria* has been found in higher abundance near sewage outfalls. Others speculate that nutrients in sewage, manure, and land runoff encourage the growth of algae which are consumed by *Pfiesteria*, thus stimulating the organism's growth indirectly.

Some scientists believe that there is strong linkage between nutrient pollution and *Pfiesteria* outbreaks in at least some of the affected waters, but others are much less certain. Nutrients, by stimulating algae growth, may provide food for *Pfiesteria*, but linkages are not clearly understood. Because bacteria in the water break down algae, water becomes depleted of oxygen needed to sustain aquatic animals. As a result, waters in which *Pfiesteria* are found also are characterized by low dissolved oxygen levels. Some scientists believe that, at least in some cases, low dissolved oxygen levels may have caused fish kills and that *Pfiesteria* bloomed as a result of dying or dead fish in the water column. In such cases, *Pfiesteria* outbreaks are an indirect result of fish kills, rather than their cause. However, other scientists speculate that, in those waters, low dissolved oxygen levels may be due to the decomposition of dead or dying fish, and not the cause of the fish kill.

Another possibility is that certain toxic compounds, such as agricultural pesticides in the water, may stress fish populations, regardless of *Pfiesteria*. Some scientists are investigating whether various compounds in the water could promote

⁴ Steidinger, Karen A. "*Pfiesteria piscicida*, Other *Pfiesteria* Species, and *Pfiesteria*-Like Species: A Question of Recognition and Toxicity." Informational handout prepared July 31, 1997, for the Pocomoke River Fish Health Technical Advisory Committee.

the growth of certain types of algae, which may stimulate the growth of *Pfiesteria*. Another potential explanation being examined is that organic nutrients, many of which are naturally occurring (such as organic material flushed by storms from swamps and wetlands in the watershed), may play an equal or more important role than inorganic nutrients from fertilizers in stimulating *Pfiesteria* and other harmful blooms. Or, it may be that the relative amounts of different nutrients are what is important. Nearly all agree, however, that much more investigation is required to determine more conclusively what role, if any, nutrient pollution may play and, if so, at what stage or stages in the organism's life cycle. It is likely to take time to develop enough information to clearly implicate any individual factor or group of factors in the conditions which result in toxic outbreaks of *Pfiesteria piscicida* and similar organisms.

Living Aquatic Resources

Scientists have postulated that schools of plankton-eating fish, such as menhaden, feed on abundant algae and other plankton that *Pfiesteria* also feeds upon and excrete or secrete a substance that triggers *Pfiesteria* to become active and toxic, especially in the absence of its preferred food. Of the two toxins released by *Pfiesteria*, a water-soluble neurotoxin stuns and paralyzes fish. This toxin also can be found in air close to the water. A second lipid-soluble toxin acts on the skin of the fish, causing the skin to dissolve. Fish exposed to either of these toxins may die, but toxic levels have not yet been identified. When fish were exposed to a concentrated extract of the water-soluble toxin in the laboratory, they became moribund in 2 to 3 seconds and died within 3 minutes. Apparently, both toxins dissipate a few hours after release.

Pfiesteria does not attach to the fish, but feeds upon the sloughing skin and blood. Lesions created by the dissolving skin cause a fish to lose its physiological integrity, rendering it susceptible to other secondary infections and osmoregulatory (water balance) disturbances. Opportunistic secondary infections by bacteria and/or fungi are likely to be the primary cause of deep sores, lesions, or ulcers.

In extreme cases, *Pfiesteria*-like organisms occur in such abundance that the toxins released cause major fish kills. Menhaden, an industrial fish harvested primarily for fishmeal and oil, is the fish species that has most often been affected. Other fish inhabiting these waters also are affected and include flounder, croakers, spot, and gar. Unverified estimates were as high as one billion fish, primarily menhaden, killed in the Neuse and Pamlico River estuaries, NC, during 1991-1993.

Human Health

Very little research on the human health effects of *Pfiesteria* toxins has been conducted. At a multi-state workshop at the Centers for Disease Control and Prevention (CDC) in Atlanta, Georgia, at the end of September 1997, attendees agreed on clinical symptoms that characterize the adverse health consequences of exposure to *Pfiesteria* toxins. These clinical features include: 1) memory loss; 2) confusion; 3) acute skin burning (on direct contact with water); or 4) three or more of an additional set of conditions (headaches, skin rash, eye irritation, upper

respiratory irritation, muscle cramps, and gastrointestinal complaints (*i.e.*, nausea, vomiting, diarrhea, and/or abdominal cramps). With these criteria and environmental qualifiers (*e.g.*, 20% of a 50-fish sample, all of the same species, have lesions caused by a toxin), it is likely that *Pfiesteria*-related surveillance data can better track potential illnesses.

Pfiesteria toxins have been blamed for causing adverse health effects in people who have come in close contact with waters where this organism is abundant. Since June 1997, the Maryland Department of Health and Hygiene has been collecting data from Maryland physicians through a state-wide surveillance system on illnesses suspected of being caused by *Pfiesteria* toxin. As of late October 1997, illness was reported by 146 persons who had been exposed to diseased fish or to waters that were the site of suspected *Pfiesteria* activity. Many of these persons are watermen and commercial fishermen.

The strongest evidence of adverse human health effects so far comes from case studies of two research scientists who were both overcome in their North Carolina laboratory in 1993. They still complain of adverse effects on their cognitive abilities, particularly after exercising. Duke University Medical Center researchers conducted experiments on rats, which showed that the toxin appeared to slow learning but did not affect memory.

What has Been the Response to *Pfiesteria*?

State Response

Maryland. In the summer of 1997, Governor Parris Glendening of Maryland, citing human health risks, closed almost all the estuaries where fish kills were observed. Meanwhile, Maryland officials advised against swimming and against eating fish with open, red sores in areas (*e.g.*, the lower Pocomoke River estuary, King's Creek in the Manokin River watershed, and portions of the Chicamacomico River drainage) where researchers found potentially toxic dinoflagellates that could have caused lesions in fish.

Using funds from the National Oceanic and Atmospheric Administration (NOAA) and the Environmental Protection Agency (EPA), Maryland conducted two surveys to learn more about agricultural activities in the affected watersheds. The Maryland Department of Agriculture completed an assessment of agricultural activities,⁵ centered on best management practices (BMPs).⁶ This report was based on a survey of current activities and on-site visits to almost a quarter of all farms in the Pocomoke drainage. The results of this study are summarized below, in the

⁵ Maryland Department of Agriculture. *Preliminary Characterization of Agriculture in the Pocomoke Watershed*. Annapolis, MD: October 1997. 16 p.

⁶ BMPs are one or more conservation practices that are determined by the state water quality agency or its planning designee to be practical means for controlling point and non-point source pollutants at levels compatible with environmental goals.

discussion of agricultural issues. The University of Maryland conducted a companion study of agricultural nutrient management plans.

Maryland took other actions to address nutrient concerns. First, the state's Department of Agriculture offered financial assistance to encourage farmers to grow winter wheat cover crops. Cover crops can reduce soil erosion as well as incorporate phosphorous and other nutrients that are attached to soil particles and store them in plant materials; these stored nutrients become available to crops grown the following year.

Second, Maryland became the first state to apply successfully to the U.S. Department of Agriculture (USDA) to implement a Conservation Reserve Enhancement Program (CREP). The state had been developing this proposal for about a year; the proposal was adjusted to increase the emphasis on counties where excessive nutrient runoff was suspected after fish kills occurred in the Pocomoke River and neighboring watersheds. Vice President Al Gore, Agriculture Secretary Dan Glickman, and Governor Glendening signed a Memorandum of Agreement to implement this program at a widely publicized press conference on October 20, 1997. This program, discussed below, will allow farmers in approved counties to receive bonus rental payments when they enroll land in the Conservation Reserve Program, retiring it from production for a decade or longer if they apply certain conservation practices designed to reduce the movement of soil and nutrients into surface waters.

Governor Glendening added three positions in the state's Department of Agriculture to provide technical support to farmers and three positions in the Department of Environment to inspect farms and initiate any necessary regulatory enforcement to protect water quality in the affected watersheds. These new efforts to reduce nutrient pollution are in addition to efforts by Maryland, Virginia, Pennsylvania, and the District of Columbia, as signatories and participants in the Chesapeake Bay Program over the past 15 years, to reduce nitrogen and phosphorus loadings to the Bay. In particular, the states and the District agreed to a goal of reducing nutrient loadings to the Bay by 40% by the year 2000.⁷

Maryland officials took an active role in making a clear distinction that most Maryland seafood was harvested from areas unaffected by *Pfiesteria* and posed no concern for consumers. In addition, Maryland officials made statements to the effect that certain commercial crabbers were likely to be reimbursed for losses directly related to the closing of Maryland estuaries.

Researchers at Johns Hopkins School of Medicine and the University of Maryland, at the direction of Governor Glendening, examined 22 people exposed to

⁷ Officials in these states expect to meet the phosphorus reduction goal, as a result of wastewater treatment plant improvements and bans on phosphate-containing detergents. Municipal and industrial plant controls also have led to reduced nitrogen loadings to the Bay, but officials believe that continued discharges from less well-controlled sources of nitrogen, including runoff from farms, lawns, and storm sewers, will prevent attaining the nitrogen reduction goal by the year 2000. Goodman, Peter S. and Todd Shields. "Not-So-Sick Bay; Despite Outbreak of *Pfiesteria*, Chesapeake Showing Signs of Improvement, Scientists Say." *Washington Post*, Oct. 27, 1997, pp. B1, B7.

Maryland waters thought to contain *Pfiesteria*, and 8 with similar backgrounds, but no contact with *Pfiesteria*, who served as a control group. It is unknown to which, if any, of the toxins these people may have been exposed. In September 1997, the medical team issued a preliminary report that it was impressed with the collected medical histories of patient after patient noting acute problems with memory loss. These researchers concluded that the presence of *Pfiesteria* toxin in water could pose a health risk.

At the heart of the Maryland response are the activities of a blue-ribbon panel, appointed by Governor Glendening in mid-September 1997, which issued its final report to him on November 3, 1997.⁸ The Commission made recommendations about reducing nutrient loadings from upland sites generally and from agriculture in particular, about responding to public health concerns, and about future research, monitoring, and assessment needs. For example, in responding to public health concerns, the Commission recommended that the State of Maryland should continue to maintain a central registry of all potential and confirmed cases of *Pfiesteria*-toxin poisonings. This registry could then be used to conduct further epidemiological studies. The Commission also recommended that physicians continue to report cases of possible *Pfiesteria*-linked illnesses, and that studies be conducted to better define the clinical and subclinical manifestations of varying degrees of exposure to *Pfiesteria* toxins.

North Carolina. In North Carolina, both the General Assembly and state regulators imposed new planning and management requirements on agricultural operators to address nutrient overload and *Pfiesteria* problems with fish kills in certain waters, particularly the Neuse River. The state's Environmental Management Commission is seeking agreement on measures to achieve a 30% reduction in nutrient loadings to that river. Early in 1997, the North Carolina Department of Environment and Natural Resources issued guidelines and instructions for local health officials warning of possible dangers to swimmers and fishermen associated with *Pfiesteria*. In September 1997, the North Carolina Department of Health and Human Services established a medical team from university medical programs to evaluate North Carolina residents possibly exposed to *Pfiesteria* toxins, and opened a telephone hotline to gather information from people who believe they may have suffered from *Pfiesteria*-related health problems.

Virginia. Although Virginia officials closed a segment of the Lower Pocomoke River in Virginia, Governor George Allen believed more evidence of human health risks was needed and did not close segments of the Rappahannock River where lesions had been found on menhaden. He asked Virginia scientists to review the Maryland medical team findings, while Virginia's Health Commissioner announced that Virginia was creating an independent team of medical experts to assess *Pfiesteria* effects on human health. Governor Allen also ordered the Virginia Department of Health to create a *Pfiesteria* epidemiology research unit, transferred funds to the new unit, and designated money for the purchase of SEM technology to aid in species identification. Similar to Maryland, Virginia officials took an active role in making

⁸ Blue Ribbon Citizen's *Pfiesteria* Action Commission. *Final Report*. Annapolis, MD: Nov. 3, 1997. 49 pp. plus appendices.

the distinction that most seafood was harvested from areas unaffected by *Pfiesteria* and posed no concern for consumers. The Virginia House of Delegates Committee on the Chesapeake Bay and Its Tributaries held a hearing on *Pfiesteria* and associated concerns in October 1997.

Other States. In early October 1997, Florida Department of Environmental Protection (DEP) officials announced that a special state task force was being created to increase understanding of *Pfiesteria*-like organisms (e.g., those identified in Florida's St. Johns River). In addition, Florida DEP scientists and laboratory facilities provided expertise and leadership in identifying *Pfiesteria*-like dinoflagellates from water samples submitted by other coastal states. Delaware officials organized a *Pfiesteria* Response Team to monitor areas where fish with lesions were reported. Delaware officials have sought to address consumer concerns over seafood safety, and have requested funding to reduce nutrients released by wastewater treatment facilities and contributed by urban runoff. South Carolina and Georgia officials are monitoring the situation, but have not taken any action since no outbreaks of *Pfiesteria*-like organisms have been reported in their waters.

Interstate Cooperative Efforts. On September 19, 1997, the Governors of Maryland, Virginia, Delaware, and West Virginia, and representatives from North Carolina, Pennsylvania, and the Clinton Administration met and agreed to conduct joint research and to share data on *Pfiesteria*-like organisms and events.

Federal Response

Elements of the Federal Response. In response to concerns raised by the State of Maryland, several federal agencies, including NOAA, EPA, USDA, the U.S. Geological Survey (USGS), and the Department of Health and Human Services, have been involved in investigating the problem, providing financial and technical assistance, and conducting or coordinating research. No single agency has the lead in these efforts, but EPA and NOAA are coordinating activities of a number of agencies and departments. Their efforts have three related elements: coordinating research, responding to the states' needs for monitoring and assessment, and trying to prevent future outbreaks of *Pfiesteria* and other harmful blooms.

Coordinating a Federal Research Strategy. Many federal agencies are conducting research to increase understanding of the human health and environmental effects of *Pfiesteria* outbreaks and the environmental factors (nitrogen, phosphorus, and other factors) that may contribute to such events. Both of these research areas are believed to be critical to respond appropriately to *Pfiesteria* outbreaks. EPA and NOAA are leading a multi-agency group to develop a federal research strategy for *Pfiesteria* and related organisms. This strategy will reflect the research that federal agencies are currently supporting, as well as identify needs and priorities for the future. According to EPA officials, the goal is to ensure that all research efforts (federal, state, and other) are shared and complementary, not redundant, and are addressing the key questions as quickly as possible. The national research strategy will focus on four areas:

- developing methods to detect and identify the toxins;

- determining toxic pathways and the means to forecast harmful blooms and impacts;
- developing management and mitigation options, including a rapid response capability; and
- enhancing education and outreach.

This plan, to be reviewed by federal and state agencies and the academic community, is intended to provide a sound base from which to build control and mitigation strategies through various coastal management programs and thus to reduce and prevent future occurrences of harmful blooms.

EPA's Office of Research and Development is currently working on several fronts to shed light on how to prevent and control future outbreaks of *Pfiesteria*. EPA, NOAA, the National Science Foundation (NSF), and the Office of Naval Research are jointly funding the Ecology and Oceanography of Harmful Algal Blooms (ECOHAB) research program over a 3-year period. Recently initiated studies in the first round of this program are expected to contribute to a better understanding of harmful blooms, their effects on human health, and the role of nutrients on the growth of harmful blooms. Results of these studies may be useful in assisting resource managers in predicting where and when a toxic bloom may occur.

Further, in support of the Interagency Committee on Environment and Natural Resources (CENR), EPA also is participating in the National Environmental Monitoring and Research Initiative. This initiative includes a pilot project in the mid-Atlantic region which is designed to better document current nutrient levels in estuaries and improve understanding of the linkages among air, land, water, biota, and people.

Supporting State Responses to Toxic *Pfiesteria* Outbreaks. In response to the human health and environmental risks and impacts associated with marine biotoxins and harmful blooms, EPA, NOAA, and other federal agencies have been working with states to better understand and, ultimately, manage or respond to harmful blooms in general and, most recently, to *Pfiesteria*-complex organisms in particular. EPA, USDA, and other agencies are especially interested in what steps can be taken to reduce nutrient pollution, and prevent these toxic events and their effects.

A group, led by NOAA's Chesapeake Bay Program Office, is coordinating federal activities to help mid-Atlantic states respond to *Pfiesteria* outbreaks. This group, primarily composed of federal field office representatives, has identified a number of near-term activities believed to be critical to helping the states immediately, as well as other activities that will help over the longer term.

Reducing Nitrogen and Phosphorus Loadings from All Sources. Although research has not yet conclusively linked nitrogen and phosphorus with toxic outbreaks of *Pfiesteria*, many federal officials and scientists believe that there is a very strong association, based on the observed events. In addition, extensive research and strong evidence suggest that excessive nitrogen and phosphorus levels lead to other harmful blooms (some of which are toxic and harmful to human health), such as red and brown tides, and can also lead to low oxygen levels and fish kills. Thus, further reducing nitrogen and phosphorus levels in coastal waters is believed to be a high

priority if risks to human health and the environment caused by *Pfiesteria* outbreaks and other harmful blooms are to be prevented.

However, because the sources of nutrient pollution are many and varied, federal officials recognize that solutions undertaken by water quality and resource managers also must be varied. EPA officials support nutrient reduction programs in several areas, including:

- *nonpoint source pollution management programs*, such as supporting state efforts to implement runoff control programs (including state coastal nonpoint pollution control programs), developing water quality criteria for nitrogen and phosphorus, and working with USDA and states to aid farmers in developing nutrient management plans which consider phosphorus limits;
- *point source pollution control programs*, such as improving controls on large-scale confined animal feeding operations, supporting development of innovative methods for managing animal wastes, and investigating process changes for additional nutrient control at municipal wastewater treatment plants;
- *watershed management*, such as supporting the development and implementation of site-specific watershed management plans to address excess nutrient loadings from all sources.

Other Specific Elements of the Federal and Congressional Response. In addition to these coordinated activities, federal agencies and departments also are pursuing specific actions, and Congress has begun to address the issues in several ways.

Department of Agriculture. Agencies in the USDA are helping Maryland collect information and providing assistance to agricultural producers. These producer assistance programs address agricultural wastes and by-products largely by implementing BMPs. The Natural Resources Conservation Service (NRCS) reportedly will provide an estimated \$300,000 under the new Environmental Quality Incentives Program (EQIP) for producers in affected watersheds to develop and implement multi-year conservation plans to implement BMPs and other conservation practices. Agriculture agencies also may give more attention to evaluating the effectiveness of these BMPs.

Another action is the October 20, 1997, federal approval of Maryland's proposal for the first Conservation Reserve Enhancement Program in the country. The enhancement program, a subset of the Conservation Reserve Program (CRP), is administered by the Farm Service Agency and offers annual rental payments to producers who retire eligible cropland from production for 10 years or more and cost-sharing assistance to install protective vegetation on those lands.⁹ The enhancement program offers large financial incentives to attract lands that have especially high

⁹ Slightly more than 19,000 acres in Maryland are currently enrolled in the Conservation Reserve Program -- a very small portion (1.2%) of the 1.6 million acres of cropland in the state.

environmental values. Producers can enroll at any time, in contrast to the CRP, where most land can only be enrolled during designated periods.

Under Maryland's enhancement program, the federal government will pay up to 50% of the land value (but not exceeding \$600 per acre) to install conservation practices. Maryland will pay up to 37.5% of the land value. Participation targets include 70,000 acres of riparian buffers, up to 10,000 acres of restored wetlands, and up to 20,000 acres of highly erodible land located within 1,000 feet of a water body. Maryland will identify 100,000 eligible acres by the end of 2002. In addition to paying the maximum annual rental rate allowed for these lands under the CRP, USDA will also increase these payments by 70% for land in riparian buffers and by 50% for other land in the enhancement program. Maryland will provide technical support to all applicants, and will establish a program to purchase perpetual easements for these lands as long as the easement terms are consistent with participation in the enhancement program. USDA estimates that the enhancement program will cost the federal government \$170 million and Maryland \$25 million over the next 15 years. Political leaders view this as a landmark effort, while the farm community is optimistic, but more cautious.

Department of Health and Human Services. Three agencies in the Department of Health and Human Services are conducting projects and initiating programs relating to *Pfiesteria*-complex organisms and their human health problems. The Food and Drug Administration's (FDA's) *Pfiesteria* program consists of two parts. FDA is funding research on testing methods for *Pfiesteria* toxins. FDA officials hope to characterize the toxins in order to develop methods for testing water at bloom sites. FDA is also assisting both states and foreign countries (e.g., Chile, the Philippines) in developing voluntary "environmental watch" programs among interested citizens that would sound an alert when natural toxins affect water quality and the health of finfish and shellfish. With trained volunteers throughout certain states, FDA is hoping to avoid expensive and, at times, fruitless water and fish sampling. Rather, FDA officials hope to use data collected by volunteers to focus laboratory tests where problems arise from *Pfiesteria* and other natural toxins. In addition, FDA laboratories respond to state requests for assistance in characterizing natural toxins found in seafood.

The Centers for Disease Control and Prevention (CDC) is using a \$7 million FY1998 appropriation to award grants to seven states that have experienced *Pfiesteria*-related human health effects, so that they can begin to address emerging issues surrounding these health effects. Congressional conferees directed that this funding be used to develop and implement a multi-state disease surveillance system that will identify and monitor health effects in people who may have been exposed to estuarine waters likely to contain *Pfiesteria* or *Pfiesteria*-like organisms, to initiate case-control studies when new incidents of illness purported to be due to exposure to the toxins are identified, and to develop a biological test of human exposure (biological marker) so that when the structures of these toxins are identified, a rapid response can be assembled between the CDC and state health departments.

The National Institute of Environmental Health Science has begun a \$400,000 research project to isolate and chemically characterize *Pfiesteria*-toxins so that critical

exposure levels for health effects associated with human environmental exposures can be estimated and the potential risks to human health can be determined.

Department of the Interior. The U.S. Fish and Wildlife Service is targeting state-selected sites for inclusion in an ongoing National Wild Fish Health Survey. Fish collected will be examined for a suite of pathogens and parasites that may be contributing to *Pfiesteria*-associated problems.

The U.S. Geological Survey is seeking to better understand the movement of nutrients into waterways and the relationship between nutrient input from watersheds and water quality in Chesapeake Bay. In addition, recent studies of Chesapeake Bay sediment cores by USGS scientists have confirmed that *Pfiesteria*-like organisms have existed in the area for at least several thousand years.

Congressional Action. Congress has taken several steps to address scientific and policy questions concerning *Pfiesteria* and other potentially harmful aquatic blooms. An oversight hearing on *Pfiesteria* and its impact on fishery resources was held on October 9, 1997, by the House Resources Subcommittee on Fisheries, Conservation, Wildlife, and Oceans. The House Government Reform and Oversight Subcommittee on Human Resources held an oversight hearing on the federal and state public health response to *Pfiesteria* on September 25, 1997. Also Representatives Gilchrest (who represents Maryland's eastern shore) and Stenholm hosted a bipartisan forum on phosphorus and water quality at the House Committee on Agriculture on November 3, 1997. Members used information from these sessions to develop legislation authorizing a *Pfiesteria* research program and research grants (H.R. 2565/S. 1219). The research program proposed in these bills would be administered by EPA, the Department of Commerce, USDA, and Department of Health and Human Services. The Senate Environment and Public Works Committee reported S. 1219 on November 4, 1997 (S. Rept. 105-132).

In addition, in appropriations bills for FY1998, Congress has provided specific funding for *Pfiesteria* research and related activities. In the bill providing funding for EPA (P.L. 105-65: Departments of Veterans Affairs and Housing and Urban Development, and Independent Agencies Appropriations Act, 1998), Congress appropriated \$3 million -- \$1.5 million for external research, and \$1.5 million to support response and monitoring efforts, public information, and cross-agency coordination and analysis. Additionally, that bill earmarked \$2 million in grants for sewage treatment plant improvements at plants on the Pocomoke River, Maryland, in response to concerns about pollutants that may be associated with fish kills in that waterbody.

Funding to deal specifically with *Pfiesteria* and related blooms was included in other FY1998 appropriations measures as well. NOAA was provided \$3.5 million for *Pfiesteria* monitoring and assessment activities as well as research on *Pfiesteria* and other harmful blooms (P.L. 105-119; Departments of Commerce, Justice, and State, the Judiciary, and Related Agencies Appropriations Act, 1998). As previously mentioned, P.L. 105-78 (Departments of Labor, Health and Human Services, and Education, and Related Agencies Appropriations Act, 1998) provided \$7 million for CDC's activities to address emerging issues of human health effects from exposure to *Pfiesteria*.

In these FY1998 appropriations measures, Congress sought to develop an appropriate balance between providing funds for defining the *Pfiesteria* problem (e.g., monitoring waterways) and money appropriated for addressing the concerns arising from *Pfiesteria*-like events (e.g., culturing the organisms, isolating and characterizing the toxins, developing diagnostic tests). Altogether, about \$13.5 million was appropriated for *Pfiesteria*-related activities in FY1998.

Policy Questions

Water Quality Management Issues

From a water quality perspective, specific pollution problems such as *Pfiesteria*, where they occur, may reflect a larger set of issues. If the scientific theories regarding the organism are proven to be correct, some of the water quality conditions that may be associated with its emergence — nutrient enrichment, in particular — also contribute to water pollution problems generally in the same areas and others nationwide. Nutrient over-enrichment of waters and algae blooms can depress oxygen levels and lead to fish kills, even where *Pfiesteria* is not present. From that perspective, *Pfiesteria* is not a singular problem. It is only one example of the challenge to improve quality in waters that experience nutrient enrichment, often from numerous sources. It does, however, represent the first instance where the public has associated human health risks with elevated nutrient levels in estuaries.

Data reported by states to EPA indicate that nutrients and bacteria are the leading causes of pollution in estuaries, where *Pfiesteria* has primarily been found, and that the principal sources of that pollution are urban runoff (discharges from storm sewers), municipal sewage treatment plants, septic systems, air deposition (motor vehicle exhaust and smokestacks, for example), and agriculture. It is difficult to determine which specific sources may be contributing to the conditions where *Pfiesteria* apparently thrives and other water quality problems exist. Thus, the first challenge for water quality managers is to assess point and nonpoint sources to quantify environmental effects of particular discharges, on a case-by-case basis.

However, because many scientists consider the linkage between nutrient pollution and *Pfiesteria* outbreaks to be uncertain, most scientists and resource managers do not believe that nutrient reduction alone will eliminate *Pfiesteria* problems. Nutrients alone may not be causing the problem, but they are one possible factor that humans can control through technology and management practices which affect land use. Further reduction in nutrient loads to aquatic systems may be beneficial for multiple reasons, but such actions do not guarantee solving the complex *Pfiesteria* problem. Thus, while nutrient reduction may be significant to achieving overall water quality improvements, it is too soon to know with any certainty how significant nutrient reduction might be in specifically addressing *Pfiesteria* and problems similar to it.

If sewage treatment plant discharges are implicated, permitting officials may tighten existing discharge limits in National Pollutant Discharge Elimination System (NPDES) permits which will result in added technological controls. If runoff from

farms or city streets is implicated, management is more complicated because, under current federal law (the Clean Water Act), these sources are regulated either by permitting or other programs, depending upon the size of the source. Generally, runoff from large animal feedlot operations (those with more than 1,000 animal units) and larger cities (those with populations greater than 100,000 persons) are regulated by NPDES permits. Runoff from other farms and smaller animal feedlot operations and cities are subject primarily to state-run management programs that rely largely on voluntary efforts to minimize runoff. The runoff from animal feedlot operations and smaller cities can be subject to NPDES permit requirements if the permitting authority so desires; however, many state NPDES authorities still use voluntary state-run programs for these sources.

Reauthorization of the Clean Water Act, which could occur in the 2nd Session of the 105th Congress, may give policymakers opportunities to consider what role that Act, and possible amendments to it, might play in addressing *Pfiesteria*-related and similar water pollution problems.¹⁰ In particular, the effectiveness of voluntary programs to manage nonpoint sources of pollution may be an issue. Similarly, policymakers may consider whether changes to the law's existing regulation of municipal, industrial, and agricultural point sources are needed to remedy coastal water quality degradation and conditions that may be associated with *Pfiesteria* outbreaks.

Agricultural Issues

Runoff or discharge of nutrients from animal production facilities (both open and confined) have been implicated in "*Pfiesteria* problems" in Maryland and North Carolina waters. Prior outbreaks in North Carolina have occurred in rural watersheds where agriculture dominates. In Maryland, suspicion is widespread that areas with concentrated livestock operations and large volumes of waste, particularly poultry farms on Maryland's eastern shore, may be important contributors of dissolved nutrients that could trigger rapid population growth by toxin-producing dinoflagellates. Manure is not the only possible agricultural source, since excessive application of commercial fertilizers can also cause nutrient enrichment of water.

The Maryland Department of Agriculture has gathered information to characterize agriculture in the Pocomoke River drainage, the largest of the "*Pfiesteria* problem" watersheds, more precisely.¹¹ Evaluators surveyed 129 of the 543 agricultural producers in the drainage. These producers manage more than 50,000 acres, less than a third of the 170,000 acres of cropland in the drainage. The survey revealed that corn or soybeans are grown on more than 80% of the crop acreage covered in the survey. Two-thirds of the producers in the drainage (366) raise poultry; these farmers raise 29 million birds annually. In addition, there are 17 swine, 17 livestock, and 2 dairy operations.

¹⁰ For additional information, see CRS Report IB97001, *Clean Water Act Reauthorization in the 105th Congress*.

¹¹ Maryland Department of Agriculture. *Preliminary Characterization of Agriculture in the Pocomoke Watershed*. Annapolis, MD: October 1997. 16 p.

Conservation practices are widely followed by the surveyed producers. More than 75% of crop producers have a soil conservation and water quality plan, and more than 70% cultivate their cropland under conservation or no-till systems. About 56% of the survey participants use nutrient management plans (about the statewide average), making these plans the third most common BMP after crop rotation and animal waste storage structures. On-site evaluations of the surveyed producers showed that almost 90% receive federal and/or state cost-sharing to implement BMPs in accordance with their plans. Most BMPs have been installed during the past decade. On-site evaluators concluded that 68% of the farmers were providing comprehensive protection to their farms using BMPs, and did not have any readily identifiable pollution problems.

Regarding animal waste management, the survey found that manure was being applied on 42% of the cropland, and that 85% of the crop producers were applying manure to cropland. Almost two-thirds of the producers receive at least a portion of their manure from someone else, and 22% of the farmers transfer all their manure to others. Almost three-quarters of the livestock producers use an animal waste storage facility; the remainder apply it directly to the fields or temporarily stockpile it. The top factor influencing a farmer's decision about when to apply manure to crops was the nutrient management plan, identified by 42% of the participants.

These data indicate relatively widespread conformance with accepted conservation practices and participation in conservation programs. If it is determined that excessive nutrients from farm activities are significant in causing the *Pfiesteria*-related problems, then it seems unlikely that the current approach to BMPs and voluntary participation would provide a satisfactory reduction in nutrients. Nutrient management plans on most farms reportedly have focused on managing nitrogen, under the assumption that effectively managing nitrogen means that phosphorous is managed as well. But research indicates that soils can become saturated with phosphorous as a result of applying animal manures to meet nitrogen need, and that phosphorous can be lost to surface and ground water when soils are saturated with this element, even when nitrogen guidelines are being met.

The NRCS is revising its nutrient management policy to address all nutrients rather than just nitrogen. The new policy will require access to adequate amounts of land to dispose of the phosphorous. This change will result in less manure being applied to some fields where phosphorus is already excessive.¹² This, in turn, will increase the supply of surplus manure in some watersheds. Group and community action, and probably some innovative approaches, may be required to address some of these problems. Approaches that scientists are examining include long-distance shipping, composting, burning, and using biotechnology to improve animal feeds. On October 29, 1997, the poultry industry announced a 4-year research program costing

¹² Tom Simpson, coordinator of Chesapeake Bay Agriculture Programs for the Maryland Department of Agriculture, pointed out during his presentation at the House Agriculture Committee forum on Nov. 3, 1997, that more than 90% of the soils in Maryland's lower eastern shore are at or above optimum levels for phosphorous.

\$1 million and aimed at curbing pollution from agriculture.¹³ This proactive proposal has reportedly been greeted with skepticism by some who believe that the magnitude of the effort is less than commensurate with the magnitude of poultry's role in nutrient enrichment.

As discussed above, large confined animal feeding operations (CAFOs, feedlots with more than 1,000 animal units) are subject to discharge permit requirements under the Clean Water Act, and other animal feeding operations may be designated as CAFOs if they pose a threat to water quality or use. The regulatory requirements for CAFOs generally prohibit discharge of waste water pollutants into navigable waters. Still, unpermitted waste discharges and spills from feedlots in a number of states, and the recent attention to *Pfiesteria*, have raised questions about the adequacy of regulation and enforcement and whether the size threshold for CAFOs should be lowered to bring more operations under regulation. Several states have enacted or are considering measures that would impose additional waste management controls on animal production facilities, beyond current federal rules.

Agricultural interests continue to hold that no scientific evidence proves that farm activities cause or even contribute to toxic dinoflagellate blooms. They also cite the Maryland Department of Agriculture survey to back their claim that most producers in these watersheds (at least in Maryland) participate in voluntary programs to implement conservation plans and properly install and maintain BMPs. But no data show how the installation, maintenance, or operation of these practices have affected water quality. Because of the lack of information about the causes of these outbreaks, agricultural interests believe that they have been unfairly singled out before the full dimensions of the problem and its more effective solutions are known. Even if nutrient enrichment from poultry farms turns out to be at the heart of this problem, decreased nutrient contributions from farms may not reduce the problems for several years.

Critics believe that agricultural activities are either the primary cause of toxic dinoflagellate blooms or are a major contributing factor. They believe that stronger management of manure could improve water quality, and that stricter pollution control regulations combined with more effective enforcement is necessary. Given the severity of the problem, many advocate immediate action, even though research to assess the causes of this problem has not been completed. Maryland's Blue-Ribbon Panel rejected some proposals for stronger controls, such as limiting overall chicken production throughout the state, but recommended new pollution control measures that would have to be enacted by the Maryland legislature.¹⁴

Human Health Issues

Scientists still need to document which and how many dinoflagellate species produce toxins that are potentially harmful to humans. Research is needed to

¹³ "Poultry Group Offers \$1 Million for Study." *Washington Post*, Oct. 30, 1997, p. D4.

¹⁴ The Blue Ribbon Panel's final report contains discussions of agricultural topics. In addition to the text of the report, several appendices provide additional insights.

determine which species may occur in high risk areas that are currently associated with fish kills, disease, and human ailments. Until scientists identify the number of toxic species involved, the active ingredients in these species' toxins, and the toxins' modes of action, and characterize the organisms' life cycles, there remain many unanswered questions about their potency and how they could affect human health. For example, no human illnesses have been reported after eating *Pfiesteria*-stricken fish, so it is unknown whether the toxins accumulate in seafood, affect human internal organs, or may be destroyed during cooking.

There is concern that shellfish, particularly filter feeders such as oysters and clams, could harbor *Pfiesteria* and the toxins. Two FDA studies of oysters that were exposed for one week to heavy doses of *Pfiesteria*-toxins established no association with the toxins. It is unclear whether the toxins break down or are diluted in the air or water. However, the toxicity appears to dissipate quickly.

It is also unclear how many different dinoflagellate species or other organisms may be producing toxins. There could also be variations in the toxins. It is clear that exposure to these toxins poses a health risk, but the boundaries of that risk have not been identified. Until some of these questions are answered, it is difficult to assess the implications of these recent fish kills on human health.

Fisheries and Estuarine Ecosystem Issues

Estuarine Ecosystem. Little concern has been raised that *Pfiesteria*-like blooms could harm the reproductive success of economically important fish stocks, and there has been no reported reduction in menhaden or other affected fish stocks. In addition, it is unknown whether pre-existing conditions within fish populations, such as weakened immune systems, could make menhaden more susceptible to toxins from *Pfiesteria*-like species.

Limited information is available on the habits and habitats of *Pfiesteria* and related species, and little is known about how this organism may spread between estuaries, particularly whether ballast water or the transport of fish products may be factors in spreading these species. Until the identity of organisms responsible for the recent fish kills is determined conclusively, considerable doubt remains as to how best to address human health and resource concerns. The life cycle of *Pfiesteria*-like species is not well known, and what triggers *Pfiesteria*-like organisms to transform between different toxic and non-toxic life stages is not well understood. In addition, potential control mechanisms have not been widely discussed, including the potential for suppressing blooms by chemical control, aeration, clay particles, or other means. Are there natural environmental features, including competing plankton populations, that could be manipulated to control *Pfiesteria* or cause it to return to or remain in non-toxic forms?

In addition to the potential impacts of *Pfiesteria*-like organisms, the roles of other components of estuarine ecosystems, such as bacteria, viruses, parasites, and non-dinoflagellate planktonic organisms, may also need to be assessed. Focusing concern on one component (*i.e.*, *Pfiesteria*-like organisms) of an entire ecosystem may fail to identify or eliminate other causes for fish kills and poor fish health. Such

short-sightedness could be costly in terms of inadequate and possibly inappropriate research efforts and ineffective and misdirected corrective measures.

Commercial Fishing. The main effects on commercial fishing result from the closure of sections of estuaries to minimize contact with possible *Pfiesteria* toxins. However, a study by the North Carolina Department of Environment and Natural Resources¹⁵ found that, although commercial fishermen were forced to change their behavior when sections of the Neuse Rivers were closed, the economic impacts on those fishermen were minimal, because they were able to adjust harvesting location..

Retail Seafood. The retail seafood industry has been affected in two ways: 1) river closures may restrict the supply of local seafood to retailers, ultimately resulting in higher seafood prices and less seafood sold at the retail level; and 2) decreased consumer confidence in the quality of local seafood which causes consumers to demand less seafood, resulting in a decrease in sales and a decrease in prices at the retail level. This decrease in demand may occur regardless of the ultimate findings on human health effects and quality of seafood. The intense media coverage of *Pfiesteria* in both North Carolina and Maryland diminished consumer confidence in seafood, despite public relations efforts of state officials. The logical conclusion would be an ambiguous effect on the retail price of seafood (depending on whether the supply or demand shock had more impact) and an unambiguous decrease in seafood retail sales.

State and federal managers have generally taken a conservative approach to questions of whether *Pfiesteria*-like species may pose any concern for seafood safety. Maryland managers prohibited all commercial and recreational fishing in affected waters, and have advised citizens not to consume fish with lesions or those that appear to be diseased. Although no instances of tainted seafood or human illness from eating fish exposed to *Pfiesteria* have been reported, health officials advise caution since so little is known about *Pfiesteria*. Commercial and economic interests, however, remain concerned that the occurrence of *Pfiesteria* diminishes consumer confidence in seafood safety generally, and that consumers may make broad assumptions about seafood sanitation and quality leading them to reject safe seafood. In Maryland, anecdotal information suggests that seafood sales may have declined as much as 45-50% by late September/early October 1997.¹⁶ The issues to be addressed are whether additional efforts may be necessary to promote seafood safety when *Pfiesteria* is present and to assist the seafood industry in addressing consumer confidence concerns with seafood.

Recreation and Tourism. River closures and concerns about water quality have negatively affected recreational users and tourism in general. As river users and tourists shift their activities away from questionable locations (unless closures are widespread), local tourism-dependent businesses experience a decline in revenues.

¹⁵ Diaby, S. *The Economic Impacts of Neuse River Closures on Commercial Fisheries*. North Carolina Department of Environment and Natural Resources, 1996.

¹⁶ Yost, Mark. "Pfiesteria Outbreak Hurts Economies of Chesapeake Bay." Dow Jones News Service, October 7, 1997.

A Larger View

Concern has been expressed worldwide that harmful aquatic blooms may be increasing in frequency and severity.¹⁷ Others question this conclusion, suggesting rather that our improved ability to detect and report such events has only made their occurrence more apparent. While many initially presumed that *Pfiesteria* or related organisms were the problem and that farming practices were the cause, state and federal agencies have conceptualized a coordinated response that focuses broadly on gaining the scientific data necessary to better understanding this problem and how to address its effects.

Fish kills regularly occur, for numerous reasons — water quality, net dumping, infectious agents, harmful blooms, chemical contaminants, *et al.* All of these factors are relevant and need to be considered when addressing recent fish kills. In addition, many small dinoflagellate species inhabit coastal and estuarine waters. Some of these species produce toxins that cause fish kills and pose public health risks. It is unwise to assume that *Pfiesteria* or morphologically similar organisms have caused all the recent events. Thus, it will likely require a multi-faceted, multi-agency approach to address all the factors related to recent fish kills, disease, and human health risks.

¹⁷ For example, see: Donald M. Anderson, "Red Tides," *Scientific American*, v. 271 (August 1994): 62-68; Jeremy Curfews, "The Fringe of the Ocean — Under Siege from Land," *Science*, v. 248 (Apr. 13, 1990): 163-165; and Elizabeth Culotte, "Red Menace in the World's Oceans," *Science*, v. 257 (Sept. 11, 1992): 1476-1477.

Selected Sites About *Pfiesteria* on the World Wide Web

Federal

U.S. Geological Survey

<http://www.usgs.gov/outreach/fishlesions>

U.S. Department of Agriculture

<http://www.nal.usda.gov/wqic/pfiest.html>

Environmental Protection Agency

<http://www.epa.gov/OWOW/estuaries/pfiesteria/>

Interagency

<http://www.gmpo.gov/pfiesteria.html>

State

North Carolina Department of Environment and Natural Resources

<http://www.ehnr.state.nc.us/EHNR/files/pfies.htm>

Virginia Department of Health

<http://www.vdh.state.va.us/misc/alert.htm>

Maryland Department of Natural Resources

<http://quantum.gacc.com/dnr/Hot/study.html>

Maryland Department of Agriculture

<http://www.mda.state.md.us/pocomoke/poc.htm>

Maryland Department of Health and Mental Hygiene

<http://www.charm.net/~epi9/news1.htm>

Delaware Department of Natural Resources and Environmental Control

<http://www.dnrec.state.de.us/tpff1.htm>

Academic

Virginia Institute of Marine Science

<http://www.vims.edu/welcome/news/pfiesteria>

University of Maryland Sea Grant Program

<http://www.mdsg.umd.edu/fish-health/pfiesteria>

University of Maryland, College of Agriculture and Natural Resources

<http://www.agnr.umd.edu/pfiesteria/agpros.htm>

North Carolina State University Botany Laboratory

http://www2.ncsu.edu/unity/lockers/project/aquatic_botany/pfiest.html

University of North Carolina

<http://www.unc.edu/depts/cmse/science/pfiesteria.html>

Woods Hole Oceanographic Institution

<http://www.redtide.whoi.edu/hab/>

Other Miscellaneous

<http://www.annonline.com/interviews/970429/related.html>

http://www.neuseriver.org/pfiester_1.html

<http://www.universe.digex.net/~bnr/pfiester.html>

<http://www.seanet.com/~tzhre/pfiest.htm>

<http://www.wral-tv.com/news/wral/techtalk/1997/0814-pfiesteria>

<http://www.pfiesteria.com>

<http://www.pamlico-nc.com/PamNews/front.htm>

http://discovery.com/cgi-bin/forums_view/dir/Discovery%20News/Pfiesteria/Experts

Selected References

Ahrenholz, Dean W., James F. Guthrie, and Ronald M. Clayton. *Observations of Ulcerative Mycosis Infections on Atlantic Menhaden (Brevoortia tyrannus)*. U.S. Dept. of Commerce, National Oceanic and Atmospheric Administration, NOAA Technical Memorandum NMFS-SEFC-196, June 1987. 11 p.

- Barker, Rodney. *And the Waters Turned to Blood: The Ultimate Biological Threat*. Simon & Schuster, New York, NY, 1997. 346 p.
- Boesch, Donald F., et al. *Harmful Algal Blooms in Coastal Waters: Options for Prevention, Control and Mitigation*. NOAA Coastal Ocean Program, Decision Analysis Series No. 10, February 1997. 49 p.
- Boyle, Robert H. "Phantom." *Natural History*, v. 105, no. 3 (March 1996): 16-19.
- Broad, William J. "Battling the Cell from Hell." *National Wildlife* (Aug./Sept. 1997): 10.
- Glasgow Jr., Howard B., et al. "Insidious Effects of a Toxic Estuarine Dinoflagellate on Fish Survival and Human Health." *Journal of Toxicology and Environmental Health* 46 (1995): 501-522.
- Hileman, Bette. "Pfiesteria Health Concerns Realized." *Chemical and Engineering News* (Oct. 13, 1997): 14-15.
- Kriz, Margaret. "Pfiesteria Hysteria." *National Journal* (Sept. 13, 1997): 1783.
- Noga, E. J., et al. "Novel Toxic Dinoflagellate Causes Epidemic Disease in Estuarine Fish." *Marine Pollution Bulletin*, v. 32, no. 2 (1996): 219-224.
- "Results of The Public Health Response to Pfiesteria Workshop — Atlanta, Georgia, September 29-30, 1997." *Morbidity and Mortality Weekly Report*, v. 46, no. 40 (October 10, 1997): 951-952.
- U.S. Congress. House. Committee on Government Re29 and Oversight. Subcommittee on Human Resources. *Federal and State Public Health Response to Pfiesteria Outbreaks*. Unpublished hearing, September 25, 1997.
- U.S. Congress. House. Committee on Resources. Subcommittee on Fisheries Conservation, Oceans, and Wildlife. *Pfiesteria and Its Impact on Fishery Resources*. Unpublished hearing, October 9, 1997.

**TECHNICAL COORDINATING COMMITTEE
MINUTES
Wednesday, March 18, 1998
Destin, Florida**

APPROVED BY:

288
COMMITTEE CHAIRMAN
10/14/98

Chairman Corky Perret called the meeting to order at 8:30 a.m. The following members and others were present:

Members

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

Staff

Jeff Rester, Habitat Program 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
Dave Donaldson, SEAMAP Program Coordinator, Ocean Springs, MS

Others

Michael Bailey, NMFS, Silver Spring, MD
Vince Guillory, LDWF, Bourg, LA
Doug Vaughan, NMFS, Beaufort, NC
Joe Smith, NMFS, Beaufort, NC
Pat Tester, NMFS, Beaufort, NC
Richard Waller, USM/GCRL, Ocean Springs, MS
Stewart Jacks, USFWS, Corpus Christi, TX

Adoption of Agenda

The agenda was approved with an addition on the update of the status of red drum tagging added under Other Business.

Adoption of Minutes

The minutes for the meeting held on October 15, 1997 in Gulf Shores, Alabama, were approved as written.

State/Federal Reports

Florida - Alan Huff stated that the Florida State Constitution is being revised this year. One of the proposed changes is to combine the Florida Game and Freshwater Fish Commission with the Florida Marine Fisheries Commission.

Alabama - Steve Heath stated that Alabama is actively participating in the charterboat survey and also an inshore recreational finfish survey. The new protocol for the permitting of artificial reefs is going good. The penalties for illegal deployment have increased. Alabama is also funding a study to look at prefabricated concrete reefs. Mr. Heath also reported that pipeline construction is increasing but the two pipeline corridors are almost full. The Mobile Bay corridor is full, and the Portersville Bay corridor is almost full. Finally, an ongoing larval crab settling project has been funded for a few more years.

Mississippi - Tom Van Devender reported that the Department of Marine Resources has a new building, and they have added 40 new staff members since December. They also have a new Public Relations Department that is producing a new newsletter for the Department. Oyster reefs are closed due to the intense rains this year. The legislative agenda for this year has been light. DMR wanted stronger language for limited entry but it failed. There was also a move to return law enforcement back to DMR but it also failed. The Bonnet Carre' monitoring project has just been completed and the report is finished. Mississippi used some Hurricane Andrew money to map oyster reefs. Some Wallop-Breaux projects included cobia tagging, red drum larvae sampling and striped bass replenishment. Interjurisdictional Fisheries money is being used to continue the 25 year trawl and seine sampling. An artificial reef plan for Mississippi has been developed but it still needs to be approved by the Mississippi Commission on Marine Resources.

Louisiana - Joey Shepard stated that a 3 year preconstruction monitoring program has been started for Davis Pond. This project will divert 10,650 cubic feet per second of water into the Barataria Basin and will go online in the year 2000. Three projects are using Hurricane Andrew relief funds. The first is a project to identify and remove underwater obstructions that plague shrimpers. The second is aerial application of herbicides to reduce aquatic vegetation in selected locations and also deploy hydrographic recorders to collect temperature, salinity, wind speed, air temperature, wave height, barometric pressure, and tidal fluctuation. The third project will monitor the effects of environmental perturbations (hypoxia) on commercial fishing. A trip ticket program is also being developed for commercial fisheries.

Texas - Page Campbell stated that Texas Parks and Wildlife now has the authority to implement a crab license and crab program. The size limit on Vermillion snapper has been raised from 8 to 10 inches. A bait fish exemption has been extended until 2001 that allows shrimpers to keep 1,500 live fish and 300 dozen Atlantic cutlassfish to be sold for bait. The stocking program is going well, with 211 million red drum fry and 37 million fingerlings stocked along with 92 million spotted seatrout fry and 5 million fingerlings. A Bycatch Reduction Device study was completed, but the results were not as great as expected. A shrimp virus study has not found any viruses so far. A red tide event continued until December of last year and a workshop is scheduled for April. One hundred twenty-four shrimp licenses have been bought back, representing about 4 percent of the licenses.

Approach of the Fish and Wildlife Service. A major change will be the creation of three new assistant regional director positions in each region for the Fisheries, Refuges and Wildlife, and Ecological Services programs. The program Assistant Regional Directors will be responsible for overseeing regional office technical staff in each of the three programs. The Administration's proposed FY 1999 budget is \$1.42 billion with \$4.4 million for fisheries programs.

Status of Freshwater Introductions

C. Perret stated that talks are still going on between Louisiana and Mississippi concerning the Bonnet Carré Spillway, and if it ever does divert water, it might not be as large as anticipated. J. Shepard stated that eight years of data on the Caenarvan diversion project show that the numbers of some species of fish and shellfish have increased while others have decreased, but this might not be reflective of the freshwater introduction because some species have increased statewide.

Demystifying *Pfiesteria*

Dr. Pat Tester gave a presentation on heterotrophic dinoflagellates, mainly *Pfiesteria*. She stressed that the public needs to be careful of what they read and see on television. She "demystified *Pfiesteria*" by explaining that the effects of *Pfiesteria* are not new to scientists. Many other organisms produce the same effects as *Pfiesteria*, and are actually more harmful in certain respects. Red tide, brown tide, and other harmful algal blooms are just as harmful. The attached report (Attachment 1) to Congress gives a more in depth look at *Pfiesteria* and other harmful algal blooms and their effects on the environment.

Updating the National Artificial Reef Plan

R. Lukens gave a presentation on updating the National Artificial Reef Plan. The Gulf and Atlantic States Marine Fisheries Commissions started the update one and half years ago. Background on the current plan was given and new changes were identified. Some of the changes include the recommendation on which types of materials are the best for artificial reefs and who should hold permits for artificial reefs. The Artificial Reef Subcommittee was asking for approval of the updated National Artificial Reef Plan. **E. Conklin moved to approve the document with changes from "must" to "should" in the permitting and mandatory monitoring sections. J. Roussel made a substitute motion to forward the National Artificial Reef Plan to the State/Federal Fisheries Management Committee without recommendation. A. Huff seconded the substitute motion and it was approved unanimously.**

Subcommittee Reports

Anadromous - D. Frugé stated that Florida, Louisiana, and Mississippi are all continuing to stock striped bass. A presentation was given on the almost completed GIS point and nonpoint source pollution study of the Pascagoula River. A water temperature survey of the Pascagoula River was completed last summer. A Gulf sturgeon telemetry project in Florida is being conducted in the Choctawhatchee River and Bay. **The TCC Anadromous Fish Subcommittee moved to request permission to complete a revision, no earlier than the year 2000, of the Striped Bass FMP. The motion passed unanimously.**

Crab - V. Guillory stated that three action items were being brought before the TCC. **The first action item was that the Geryonid species profile working group work cooperatively with the Gulf Council on the profile, and that Harriet Perry be the Commission's representative and Dr. Rob Erdman be suggested as the Council's representative. This item was approved.** The next item was concerning the Blue Crab Mortality Symposium in Lafayette, Louisiana in May 1999. **The Crab Subcommittee was seeking approval for the Subcommittee and 3 other invited speakers to attend the meeting. J. Roussel made a substitute motion to prepare more details for the Fall Commission meeting and defer action until then. This motion was approved. The third action item was to add Traci Floyd**

to represent Mississippi on the Technical Task Force and the Crab Subcommittee. This action was approved. Also, all sections of the Blue Crab FMP are in draft form, except the sociology and economic sections.

SEAMAP - R. Waller reported that the spring plankton survey is coming up and they are preparing for the summer shrimp/groundfish survey. A generic presentation for SEAMAP is being developed to allow anyone to give a presentation describing the SEAMAP program. Florida has been having problems coming up with a research vessel for their surveys. The Texas Shrimp Association objects to the near real time data being produced by the SEAMAP surveys. The 1996 data atlas will be published this year. So far, 216 requests from outside sources have been filled for SEAMAP data. There will be a meeting in April to discuss the calibration of gear used in the surveys. Another meeting in April will address the techniques for processing environmental data. Finally, the reef fish surveys might be canceled this year.

Data Management - S. Lazauski stated that there was a presentation on a new device to input data into computers. Texas has tested the device in their creel surveys and feels it has potential. RecFIN/ComFIN met in Orlando, Florida, and discussed night fishing and how to account for it, and also discussed data collection from fishing tournaments. The charterboat survey was also discussed.

Other Business

T. McIlwain gave an update on the red drum tagging project. He stated that the recapture portion of the study will be done this year from Alabama to the Louisiana/Texas state line. The objective will be to recapture as many red drum as possible this summer.

There being no further business, the meeting adjourned at 1:55 p.m.

CRS Report for Congress

Pfiesteria and Related Harmful Blooms: Natural Resource and Human Health Concerns

December 8, 1997

Eugene H. Buck, Claudia Copeland, and Jeffrey A. Zinn
Senior Analysts
Environment and Natural Resources Policy Division

Donna U. Vogt
Analyst
Science, Technology, and Medicine Division



Pfiesteria and Related Harmful Blooms: Natural Resource and Human Health Concerns

Summary

Congress, federal agencies, and affected states are seeking to better understand *Pfiesteria piscicida* (a recently identified species of dinoflagellate) and related species, whose blooms release toxins that can harm fish and possibly human health under certain conditions. Although menhaden, an industrial fish used primarily in fishmeal and oil production, is the dominant species observed to have been killed by these organisms, consumers have reduced their purchases of Chesapeake Bay seafood after extensive media coverage highlighted toxic events. Both the water- and lipid-soluble toxins of *Pfiesteria* and related species have been blamed for adverse health effects in people who have come in contact with affected waters.

Many scientists believe that nutrient enrichment of waters plays a role in *Pfiesteria* outbreaks, but the exact mechanisms are unclear. Some agricultural activities, especially large livestock facilities, are concentrated sources of nutrients, which can leach into ground and surface waters. In Maryland, phosphorous from these sources has attracted considerable attention, because it is often the limiting factor whose increase encourages blooms of aquatic organisms such as *Pfiesteria*. However, agricultural interests believe that this attention unfairly singles out agriculture, and they are investigating alternative explanations. Most agree that more investigation is required to develop a better understanding of the role of nutrient pollution. In affected watersheds, agricultural agencies and interests are both collecting information to characterize current farming enterprises and conservation accomplishments more fully and increasing staff and financial resources to work with farmers on reducing nutrient concentrations.

While individual states seek to address concerns and determine how to mitigate associated impacts, Congress and federal agencies are considering how best to assist state efforts. Federal and state governments have funded surveillance efforts as well as research into testing and characterization of the toxins and their effect on human health. Reauthorization of the Clean Water Act, which could occur in the 2nd Session of the 105th Congress, may give policymakers opportunities to consider what role that Act might play in addressing *Pfiesteria*-related and similar water quality problems. Legislative attention to research and related topics also could occur.

Although initially it appeared easy to assume that *Pfiesteria* or related organisms were the problem and that agricultural practices were the cause, state and federal agencies are examining a broad array of causes and remedies. One example of a broad approach to these problems is provided in the November 1997 report by the Blue Ribbon Citizen's *Pfiesteria* Action Commission to Maryland Governor Parris Glendening, which will be the basis for further actions by the Maryland Legislature.

Contents

Introduction	1
What is <i>Pfiesteria</i> ?	2
<i>Pfiesteria</i> -Complex Organisms — Interactions with the Environment and Human Health	3
Water Quality Conditions and <i>Pfiesteria</i>	3
Living Aquatic Resources	4
Human Health	4
What has Been the Response to <i>Pfiesteria</i> ?	5
State Response	5
Maryland	5
North Carolina	7
Virginia	7
Other States	8
Interstate Cooperative Efforts	8
Federal Response	8
Elements of the Federal Response	8
Other Specific Elements of the Federal and Congressional Response	10
Policy Questions	13
Water Quality Management Issues	13
Agricultural Issues	14
Human Health Issues	16
Fisheries and Estuarine Ecosystem Issues	17
Estuarine Ecosystem	17
Commercial Fishing	18
Retail Seafood	18
Recreation and Tourism	18
A Larger View	19
Selected Sites About <i>Pfiesteria</i> on the World Wide Web	20
Federal	20
State	20
Academic	20
Other Miscellaneous	21
Selected References	21

Pfiesteria and Related Harmful Blooms: Natural Resource and Human Health Concerns

Introduction

Even with widespread implementation of several programs to protect and improve water quality in coastal waters, there has been an increase in the frequencies, virulence, and geographic extent of toxic blooms¹ of planktonic marine organisms, and increased biomass of non-toxic blooms has become apparent along the whole U.S. coastline, including Alaska and Hawaii, during the 1990s. So-called "red tides" by *Gymnodinium* dinoflagellates have caused fish and marine mammal mortalities offshore of many states, while increased algal growth off the mouth of the Mississippi River annually produces a massive anoxic zone, devoid of most marine life. While the problems of harmful blooms appear to be widespread and possibly increasing, this report focuses specifically on the more recent concerns with *Pfiesteria*-like species in the mid-Atlantic region. These concerns have attracted congressional interest -- House subcommittee hearings, specific FY1998 appropriations provisions, and as justification for several general legislative proposals.

Major fish kills have been attributed to *Pfiesteria piscicida*, a species of dinoflagellate (a group of aquatic, motile, single-celled, planktonic organisms), in North Carolina (primarily in the estuaries of the Neuse and Pamlico Rivers) since the early 1990s. While a 1996 fish kill at a Maryland fish farm was associated with *Pfiesteria piscicida*, other *Pfiesteria*-like organisms have been identified in Maryland, Delaware, Virginia, South Carolina, and Florida. Other than the Maryland fish farm, however, scientists have not yet validated the reports of *Pfiesteria* in the wild in these other states. Dinoflagellate species similar to, and easily confused with, *Pfiesteria* have been identified in some of these areas, including the Pocomoke River in Maryland. Fish kills in these east coast estuaries usually were associated with hot summers and periodic, brief, heavy rains within the middle and lower portions of coastal river watersheds. Lesions on estuarine fish, particularly in menhaden, have been documented from New York to Florida since the early 1980s. Although some have suggested that instances of ulcerative mycosis (fungal lesions) in mid-Atlantic menhaden during the mid-1980s may have been caused or influenced by *Pfiesteria*-like organisms,² this is conjecture and has not been proven. Because lesions are non-

¹ A "bloom" is an event involving extremely rapid population growth by a species of drifting (*i.e.*, planktonic) aquatic organism. During a bloom, an organism that otherwise is seldom noticed because of its microscopic size may impart a color to the water (*e.g.*, a "red" tide) by its abundance.

² Fungal lesions may be a secondary opportunistic response to skin lesions caused by *Pfiesteria* toxins.

specific and can be caused by a number of mechanisms, lesions alone are insufficient to indicate *Pfiesteria* exposure.

It has been puzzling to some that no associated mortalities have been reported of animals (*e.g.*, gulls, terns, cormorants, marine mammals, racoons, turtles) that inhabit the same estuaries and may feed on dead or infected fish. In addition, no symptoms of respiratory distress, neuromotor function impairment, wasting, sores or lesions, or general unkempt appearance have been reported in these other animals, which would almost certainly have been exposed to any airborne toxins and contaminated water and/or ingested contaminated fish. This absence of symptoms raises questions about the virulence of the toxins as well as the range and duration of potential impacts, since dinoflagellate red tides have been observed to cause distress and mortality widely in affected ecosystems.

What is *Pfiesteria*?

Pfiesteria piscicida, discovered in 1988 in a laboratory fish tank and formally identified and named in 1996, was identified from fish kill areas in the estuaries of the Pamlico and Neuse Rivers of North Carolina in 1991. Dr. JoAnn Burkholder, an associate professor at North Carolina State University, has focused much of her recent work on characterizing this organism. *Pfiesteria piscicida* has a complicated life cycle involving as many as 24 different physical forms, with the ability to transform quickly (*i.e.*, within minutes to hours) from one form to another. While most forms are non-toxic, some life stages release toxins that have been blamed for fish kills and implicated in human illness in North Carolina. At least two different toxins have been identified as released by this organism, a fat-soluble toxin that causes skin lesions and a water-soluble toxin that is neurotoxic.

Identification of *Pfiesteria*-like organisms is difficult, requiring special treatment of the organism's cells and viewing under a scanning electron microscope (SEM). However, few laboratories have the equipment and experience necessary to perform this identification. A number of dinoflagellate species in possibly several genera — a "*Pfiesteria* complex" of morphologically similar species — may occur together and be responsible for the *Pfiesteria*-like fish mortality events. SEM has not always revealed the presence of *Pfiesteria* in samples identified as positive by toxicity bioassay procedures.³ In addition, this organism's ability to transform quickly between non-toxic and toxic forms has made it difficult to identify the organism causing specific toxic events. Several similar species may act like *Pfiesteria*, inducing a positive response in toxicity bioassays, but are not recognizable as *Pfiesteria* under SEM. Several investigators, using SEM, suggest that some of the toxic events may

³ A toxicity bioassay involves placing a suspect water sample in an aquarium containing fish, and waiting to see if the dinoflagellate organisms reproduce and induce the characteristic lesions and death in the fish. This procedure may require as long as two weeks to complete. While a toxicity bioassay may confirm the toxicity of a sample, it may not be conclusive as to a cause and effect relationship between the organism in the sample and the toxic episode in the waterway coincident with sample collection.

be caused by dinoflagellates of a new unidentified genus, possibly related to *Peridiniopsis*.⁴

***Pfiesteria*-Complex Organisms — Interactions with the Environment and Human Health**

Water Quality Conditions and *Pfiesteria*

Pfiesteria-like dinoflagellates exist over extensive environmental and geographic ranges. They have a wide salinity tolerance for both freshwater and seawater, as well as wide temperature tolerance. Optimum conditions for *Pfiesteria* and related species are shallow, brackish, slow-moving waters, typically found in estuaries; temperatures of about 75 degrees F.; and an abundance of fish. These conditions change seasonally; hence, toxic outbreaks tend to occur in spring and summer months. Scientists believe that these organisms are present at all times in estuarine waters where they have been found, but become active, and potentially toxic, only under certain conditions.

Nutrient (nitrogen and phosphorus) enrichment of the waters may play a role in *Pfiesteria* outbreaks, but the mechanisms are unclear. For example, some scientists believe that, at certain points in its life cycle, *Pfiesteria* can be stimulated directly by dissolved organic nutrients derived from human and animal wastes (sewage and manure). *Pfiesteria* has been found in higher abundance near sewage outfalls. Others speculate that nutrients in sewage, manure, and land runoff encourage the growth of algae which are consumed by *Pfiesteria*, thus stimulating the organism's growth indirectly.

Some scientists believe that there is strong linkage between nutrient pollution and *Pfiesteria* outbreaks in at least some of the affected waters, but others are much less certain. Nutrients, by stimulating algae growth, may provide food for *Pfiesteria*, but linkages are not clearly understood. Because bacteria in the water break down algae, water becomes depleted of oxygen needed to sustain aquatic animals. As a result, waters in which *Pfiesteria* are found also are characterized by low dissolved oxygen levels. Some scientists believe that, at least in some cases, low dissolved oxygen levels may have caused fish kills and that *Pfiesteria* bloomed as a result of dying or dead fish in the water column. In such cases, *Pfiesteria* outbreaks are an indirect result of fish kills, rather than their cause. However, other scientists speculate that, in those waters, low dissolved oxygen levels may be due to the decomposition of dead or dying fish, and not the cause of the fish kill.

Another possibility is that certain toxic compounds, such as agricultural pesticides in the water, may stress fish populations, regardless of *Pfiesteria*. Some scientists are investigating whether various compounds in the water could promote

⁴ Steidinger, Karen A. "*Pfiesteria piscicida*, Other *Pfiesteria* Species, and *Pfiesteria*-Like Species: A Question of Recognition and Toxicity." Informational handout prepared July 31, 1997, for the Pocomoke River Fish Health Technical Advisory Committee.

the growth of certain types of algae, which may stimulate the growth of *Pfiesteria*. Another potential explanation being examined is that organic nutrients, many of which are naturally occurring (such as organic material flushed by storms from swamps and wetlands in the watershed), may play an equal or more important role than inorganic nutrients from fertilizers in stimulating *Pfiesteria* and other harmful blooms. Or, it may be that the relative amounts of different nutrients are what is important. Nearly all agree, however, that much more investigation is required to determine more conclusively what role, if any, nutrient pollution may play and, if so, at what stage or stages in the organism's life cycle. It is likely to take time to develop enough information to clearly implicate any individual factor or group of factors in the conditions which result in toxic outbreaks of *Pfiesteria piscicida* and similar organisms.

Living Aquatic Resources

Scientists have postulated that schools of plankton-eating fish, such as menhaden, feed on abundant algae and other plankton that *Pfiesteria* also feeds upon and excrete or secrete a substance that triggers *Pfiesteria* to become active and toxic, especially in the absence of its preferred food. Of the two toxins released by *Pfiesteria*, a water-soluble neurotoxin stuns and paralyzes fish. This toxin also can be found in air close to the water. A second lipid-soluble toxin acts on the skin of the fish, causing the skin to dissolve. Fish exposed to either of these toxins may die, but toxic levels have not yet been identified. When fish were exposed to a concentrated extract of the water-soluble toxin in the laboratory, they became moribund in 2 to 3 seconds and died within 3 minutes. Apparently, both toxins dissipate a few hours after release.

Pfiesteria does not attach to the fish, but feeds upon the sloughing skin and blood. Lesions created by the dissolving skin cause a fish to lose its physiological integrity, rendering it susceptible to other secondary infections and osmoregulatory (water balance) disturbances. Opportunistic secondary infections by bacteria and/or fungi are likely to be the primary cause of deep sores, lesions, or ulcers.

In extreme cases, *Pfiesteria*-like organisms occur in such abundance that the toxins released cause major fish kills. Menhaden, an industrial fish harvested primarily for fishmeal and oil, is the fish species that has most often been affected. Other fish inhabiting these waters also are affected and include flounder, croakers, spot, and gar. Unverified estimates were as high as one billion fish, primarily menhaden, killed in the Neuse and Pamlico River estuaries, NC, during 1991-1993.

Human Health

Very little research on the human health effects of *Pfiesteria* toxins has been conducted. At a multi-state workshop at the Centers for Disease Control and Prevention (CDC) in Atlanta, Georgia, at the end of September 1997, attendees agreed on clinical symptoms that characterize the adverse health consequences of exposure to *Pfiesteria* toxins. These clinical features include: 1) memory loss; 2) confusion; 3) acute skin burning (on direct contact with water); or 4) three or more of an additional set of conditions (headaches, skin rash, eye irritation, upper

respiratory irritation, muscle cramps, and gastrointestinal complaints (*i.e.*, nausea, vomiting, diarrhea, and/or abdominal cramps). With these criteria and environmental qualifiers (*e.g.*, 20% of a 50-fish sample, all of the same species, have lesions caused by a toxin), it is likely that *Pfiesteria*-related surveillance data can better track potential illnesses.

Pfiesteria toxins have been blamed for causing adverse health effects in people who have come in close contact with waters where this organism is abundant. Since June 1997, the Maryland Department of Health and Hygiene has been collecting data from Maryland physicians through a state-wide surveillance system on illnesses suspected of being caused by *Pfiesteria* toxin. As of late October 1997, illness was reported by 146 persons who had been exposed to diseased fish or to waters that were the site of suspected *Pfiesteria* activity. Many of these persons are watermen and commercial fishermen.

The strongest evidence of adverse human health effects so far comes from case studies of two research scientists who were both overcome in their North Carolina laboratory in 1993. They still complain of adverse effects on their cognitive abilities, particularly after exercising. Duke University Medical Center researchers conducted experiments on rats, which showed that the toxin appeared to slow learning but did not affect memory.

What has Been the Response to *Pfiesteria*?

State Response

Maryland. In the summer of 1997, Governor Parris Glendening of Maryland, citing human health risks, closed almost all the estuaries where fish kills were observed. Meanwhile, Maryland officials advised against swimming and against eating fish with open, red sores in areas (*e.g.*, the lower Pocomoke River estuary, King's Creek in the Manokin River watershed, and portions of the Chicamacomico River drainage) where researchers found potentially toxic dinoflagellates that could have caused lesions in fish.

Using funds from the National Oceanic and Atmospheric Administration (NOAA) and the Environmental Protection Agency (EPA), Maryland conducted two surveys to learn more about agricultural activities in the affected watersheds. The Maryland Department of Agriculture completed an assessment of agricultural activities,⁵ centered on best management practices (BMPs).⁶ This report was based on a survey of current activities and on-site visits to almost a quarter of all farms in the Pocomoke drainage. The results of this study are summarized below, in the

⁵ Maryland Department of Agriculture. *Preliminary Characterization of Agriculture in the Pocomoke Watershed*. Annapolis, MD: October 1997. 16 p.

⁶ BMPs are one or more conservation practices that are determined by the state water quality agency or its planning designee to be practical means for controlling point and non-point source pollutants at levels compatible with environmental goals.

discussion of agricultural issues. The University of Maryland conducted a companion study of agricultural nutrient management plans.

Maryland took other actions to address nutrient concerns. First, the state's Department of Agriculture offered financial assistance to encourage farmers to grow winter wheat cover crops. Cover crops can reduce soil erosion as well as incorporate phosphorous and other nutrients that are attached to soil particles and store them in plant materials; these stored nutrients become available to crops grown the following year.

Second, Maryland became the first state to apply successfully to the U.S. Department of Agriculture (USDA) to implement a Conservation Reserve Enhancement Program (CREP). The state had been developing this proposal for about a year; the proposal was adjusted to increase the emphasis on counties where excessive nutrient runoff was suspected after fish kills occurred in the Pocomoke River and neighboring watersheds. Vice President Al Gore, Agriculture Secretary Dan Glickman, and Governor Glendening signed a Memorandum of Agreement to implement this program at a widely publicized press conference on October 20, 1997. This program, discussed below, will allow farmers in approved counties to receive bonus rental payments when they enroll land in the Conservation Reserve Program, retiring it from production for a decade or longer if they apply certain conservation practices designed to reduce the movement of soil and nutrients into surface waters.

Governor Glendening added three positions in the state's Department of Agriculture to provide technical support to farmers and three positions in the Department of Environment to inspect farms and initiate any necessary regulatory enforcement to protect water quality in the affected watersheds. These new efforts to reduce nutrient pollution are in addition to efforts by Maryland, Virginia, Pennsylvania, and the District of Columbia, as signatories and participants in the Chesapeake Bay Program over the past 15 years, to reduce nitrogen and phosphorus loadings to the Bay. In particular, the states and the District agreed to a goal of reducing nutrient loadings to the Bay by 40% by the year 2000.⁷

Maryland officials took an active role in making a clear distinction that most Maryland seafood was harvested from areas unaffected by *Pfiesteria* and posed no concern for consumers. In addition, Maryland officials made statements to the effect that certain commercial crabbers were likely to be reimbursed for losses directly related to the closing of Maryland estuaries.

Researchers at Johns Hopkins School of Medicine and the University of Maryland, at the direction of Governor Glendening, examined 22 people exposed to

⁷ Officials in these states expect to meet the phosphorus reduction goal, as a result of wastewater treatment plant improvements and bans on phosphate-containing detergents. Municipal and industrial plant controls also have led to reduced nitrogen loadings to the Bay, but officials believe that continued discharges from less well-controlled sources of nitrogen, including runoff from farms, lawns, and storm sewers, will prevent attaining the nitrogen reduction goal by the year 2000. Goodman, Peter S. and Todd Shields. "Not-So-Sick Bay; Despite Outbreak of *Pfiesteria*, Chesapeake Showing Signs of Improvement, Scientists Say." *Washington Post*, Oct. 27, 1997, pp. B1, B7.

Maryland waters thought to contain *Pfiesteria*, and 8 with similar backgrounds, but no contact with *Pfiesteria*, who served as a control group. It is unknown to which, if any, of the toxins these people may have been exposed. In September 1997, the medical team issued a preliminary report that it was impressed with the collected medical histories of patient after patient noting acute problems with memory loss. These researchers concluded that the presence of *Pfiesteria* toxin in water could pose a health risk.

At the heart of the Maryland response are the activities of a blue-ribbon panel, appointed by Governor Glendening in mid-September 1997, which issued its final report to him on November 3, 1997.⁸ The Commission made recommendations about reducing nutrient loadings from upland sites generally and from agriculture in particular, about responding to public health concerns, and about future research, monitoring, and assessment needs. For example, in responding to public health concerns, the Commission recommended that the State of Maryland should continue to maintain a central registry of all potential and confirmed cases of *Pfiesteria*-toxin poisonings. This registry could then be used to conduct further epidemiological studies. The Commission also recommended that physicians continue to report cases of possible *Pfiesteria*-linked illnesses, and that studies be conducted to better define the clinical and subclinical manifestations of varying degrees of exposure to *Pfiesteria* toxins.

North Carolina. In North Carolina, both the General Assembly and state regulators imposed new planning and management requirements on agricultural operators to address nutrient overload and *Pfiesteria* problems with fish kills in certain waters, particularly the Neuse River. The state's Environmental Management Commission is seeking agreement on measures to achieve a 30% reduction in nutrient loadings to that river. Early in 1997, the North Carolina Department of Environment and Natural Resources issued guidelines and instructions for local health officials warning of possible dangers to swimmers and fishermen associated with *Pfiesteria*. In September 1997, the North Carolina Department of Health and Human Services established a medical team from university medical programs to evaluate North Carolina residents possibly exposed to *Pfiesteria* toxins, and opened a telephone hotline to gather information from people who believe they may have suffered from *Pfiesteria*-related health problems.

Virginia. Although Virginia officials closed a segment of the Lower Pocomoke River in Virginia, Governor George Allen believed more evidence of human health risks was needed and did not close segments of the Rappahannock River where lesions had been found on menhaden. He asked Virginia scientists to review the Maryland medical team findings, while Virginia's Health Commissioner announced that Virginia was creating an independent team of medical experts to assess *Pfiesteria* effects on human health. Governor Allen also ordered the Virginia Department of Health to create a *Pfiesteria* epidemiology research unit, transferred funds to the new unit, and designated money for the purchase of SEM technology to aid in species identification. Similar to Maryland, Virginia officials took an active role in making

⁸ Blue Ribbon Citizen's *Pfiesteria* Action Commission. *Final Report*. Annapolis, MD: Nov. 3, 1997. 49 pp. plus appendices.

the distinction that most seafood was harvested from areas unaffected by *Pfiesteria* and posed no concern for consumers. The Virginia House of Delegates Committee on the Chesapeake Bay and Its Tributaries held a hearing on *Pfiesteria* and associated concerns in October 1997.

Other States. In early October 1997, Florida Department of Environmental Protection (DEP) officials announced that a special state task force was being created to increase understanding of *Pfiesteria*-like organisms (e.g., those identified in Florida's St. Johns River). In addition, Florida DEP scientists and laboratory facilities provided expertise and leadership in identifying *Pfiesteria*-like dinoflagellates from water samples submitted by other coastal states. Delaware officials organized a *Pfiesteria* Response Team to monitor areas where fish with lesions were reported. Delaware officials have sought to address consumer concerns over seafood safety, and have requested funding to reduce nutrients released by wastewater treatment facilities and contributed by urban runoff. South Carolina and Georgia officials are monitoring the situation, but have not taken any action since no outbreaks of *Pfiesteria*-like organisms have been reported in their waters.

Interstate Cooperative Efforts. On September 19, 1997, the Governors of Maryland, Virginia, Delaware, and West Virginia, and representatives from North Carolina, Pennsylvania, and the Clinton Administration met and agreed to conduct joint research and to share data on *Pfiesteria*-like organisms and events.

Federal Response

Elements of the Federal Response. In response to concerns raised by the State of Maryland, several federal agencies, including NOAA, EPA, USDA, the U.S. Geological Survey (USGS), and the Department of Health and Human Services, have been involved in investigating the problem, providing financial and technical assistance, and conducting or coordinating research. No single agency has the lead in these efforts, but EPA and NOAA are coordinating activities of a number of agencies and departments. Their efforts have three related elements: coordinating research, responding to the states' needs for monitoring and assessment, and trying to prevent future outbreaks of *Pfiesteria* and other harmful blooms.

Coordinating a Federal Research Strategy. Many federal agencies are conducting research to increase understanding of the human health and environmental effects of *Pfiesteria* outbreaks and the environmental factors (nitrogen, phosphorus, and other factors) that may contribute to such events. Both of these research areas are believed to be critical to respond appropriately to *Pfiesteria* outbreaks. EPA and NOAA are leading a multi-agency group to develop a federal research strategy for *Pfiesteria* and related organisms. This strategy will reflect the research that federal agencies are currently supporting, as well as identify needs and priorities for the future. According to EPA officials, the goal is to ensure that all research efforts (federal, state, and other) are shared and complementary, not redundant, and are addressing the key questions as quickly as possible. The national research strategy will focus on four areas:

- developing methods to detect and identify the toxins;

- determining toxic pathways and the means to forecast harmful blooms and impacts;
- developing management and mitigation options, including a rapid response capability; and
- enhancing education and outreach.

This plan, to be reviewed by federal and state agencies and the academic community, is intended to provide a sound base from which to build control and mitigation strategies through various coastal management programs and thus to reduce and prevent future occurrences of harmful blooms.

EPA's Office of Research and Development is currently working on several fronts to shed light on how to prevent and control future outbreaks of *Pfiesteria*. EPA, NOAA, the National Science Foundation (NSF), and the Office of Naval Research are jointly funding the Ecology and Oceanography of Harmful Algal Blooms (ECOHAB) research program over a 3-year period. Recently initiated studies in the first round of this program are expected to contribute to a better understanding of harmful blooms, their effects on human health, and the role of nutrients on the growth of harmful blooms. Results of these studies may be useful in assisting resource managers in predicting where and when a toxic bloom may occur.

Further, in support of the Interagency Committee on Environment and Natural Resources (CENR), EPA also is participating in the National Environmental Monitoring and Research Initiative. This initiative includes a pilot project in the mid-Atlantic region which is designed to better document current nutrient levels in estuaries and improve understanding of the linkages among air, land, water, biota, and people.

Supporting State Responses to Toxic Pfiesteria Outbreaks. In response to the human health and environmental risks and impacts associated with marine biotoxins and harmful blooms, EPA, NOAA, and other federal agencies have been working with states to better understand and, ultimately, manage or respond to harmful blooms in general and, most recently, to *Pfiesteria*-complex organisms in particular. EPA, USDA, and other agencies are especially interested in what steps can be taken to reduce nutrient pollution, and prevent these toxic events and their effects.

A group, led by NOAA's Chesapeake Bay Program Office, is coordinating federal activities to help mid-Atlantic states respond to *Pfiesteria* outbreaks. This group, primarily composed of federal field office representatives, has identified a number of near-term activities believed to be critical to helping the states immediately, as well as other activities that will help over the longer term.

Reducing Nitrogen and Phosphorus Loadings from All Sources. Although research has not yet conclusively linked nitrogen and phosphorus with toxic outbreaks of *Pfiesteria*, many federal officials and scientists believe that there is a very strong association, based on the observed events. In addition, extensive research and strong evidence suggest that excessive nitrogen and phosphorus levels lead to other harmful blooms (some of which are toxic and harmful to human health), such as red and brown tides, and can also lead to low oxygen levels and fish kills. Thus, further reducing nitrogen and phosphorus levels in coastal waters is believed to be a high

priority if risks to human health and the environment caused by *Pfiesteria* outbreaks and other harmful blooms are to be prevented.

However, because the sources of nutrient pollution are many and varied, federal officials recognize that solutions undertaken by water quality and resource managers also must be varied. EPA officials support nutrient reduction programs in several areas, including:

- *nonpoint source pollution management programs*, such as supporting state efforts to implement runoff control programs (including state coastal nonpoint pollution control programs), developing water quality criteria for nitrogen and phosphorus, and working with USDA and states to aid farmers in developing nutrient management plans which consider phosphorus limits;
- *point source pollution control programs*, such as improving controls on large-scale confined animal feeding operations, supporting development of innovative methods for managing animal wastes, and investigating process changes for additional nutrient control at municipal wastewater treatment plants;
- *watershed management*, such as supporting the development and implementation of site-specific watershed management plans to address excess nutrient loadings from all sources.

Other Specific Elements of the Federal and Congressional Response. In addition to these coordinated activities, federal agencies and departments also are pursuing specific actions, and Congress has begun to address the issues in several ways.

Department of Agriculture. Agencies in the USDA are helping Maryland collect information and providing assistance to agricultural producers. These producer assistance programs address agricultural wastes and by-products largely by implementing BMPs. The Natural Resources Conservation Service (NRCS) reportedly will provide an estimated \$300,000 under the new Environmental Quality Incentives Program (EQIP) for producers in affected watersheds to develop and implement multi-year conservation plans to implement BMPs and other conservation practices. Agriculture agencies also may give more attention to evaluating the effectiveness of these BMPs.

Another action is the October 20, 1997, federal approval of Maryland's proposal for the first Conservation Reserve Enhancement Program in the country. The enhancement program, a subset of the Conservation Reserve Program (CRP), is administered by the Farm Service Agency and offers annual rental payments to producers who retire eligible cropland from production for 10 years or more and cost-sharing assistance to install protective vegetation on those lands.⁹ The enhancement program offers large financial incentives to attract lands that have especially high

⁹ Slightly more than 19,000 acres in Maryland are currently enrolled in the Conservation Reserve Program -- a very small portion (1.2%) of the 1.6 million acres of cropland in the state.

environmental values. Producers can enroll at any time, in contrast to the CRP, where most land can only be enrolled during designated periods.

Under Maryland's enhancement program, the federal government will pay up to 50% of the land value (but not exceeding \$600 per acre) to install conservation practices. Maryland will pay up to 37.5% of the land value. Participation targets include 70,000 acres of riparian buffers, up to 10,000 acres of restored wetlands, and up to 20,000 acres of highly erodible land located within 1,000 feet of a water body. Maryland will identify 100,000 eligible acres by the end of 2002. In addition to paying the maximum annual rental rate allowed for these lands under the CRP, USDA will also increase these payments by 70% for land in riparian buffers and by 50% for other land in the enhancement program. Maryland will provide technical support to all applicants, and will establish a program to purchase perpetual easements for these lands as long as the easement terms are consistent with participation in the enhancement program. USDA estimates that the enhancement program will cost the federal government \$170 million and Maryland \$25 million over the next 15 years. Political leaders view this as a landmark effort, while the farm community is optimistic, but more cautious.

Department of Health and Human Services. Three agencies in the Department of Health and Human Services are conducting projects and initiating programs relating to *Pfiesteria*-complex organisms and their human health problems. The Food and Drug Administration's (FDA's) *Pfiesteria* program consists of two parts. FDA is funding research on testing methods for *Pfiesteria* toxins. FDA officials hope to characterize the toxins in order to develop methods for testing water at bloom sites. FDA is also assisting both states and foreign countries (e.g., Chile, the Philippines) in developing voluntary "environmental watch" programs among interested citizens that would sound an alert when natural toxins affect water quality and the health of finfish and shellfish. With trained volunteers throughout certain states, FDA is hoping to avoid expensive and, at times, fruitless water and fish sampling. Rather, FDA officials hope to use data collected by volunteers to focus laboratory tests where problems arise from *Pfiesteria* and other natural toxins. In addition, FDA laboratories respond to state requests for assistance in characterizing natural toxins found in seafood.

The Centers for Disease Control and Prevention (CDC) is using a \$7 million FY1998 appropriation to award grants to seven states that have experienced *Pfiesteria*-related human health effects, so that they can begin to address emerging issues surrounding these health effects. Congressional conferees directed that this funding be used to develop and implement a multi-state disease surveillance system that will identify and monitor health effects in people who may have been exposed to estuarine waters likely to contain *Pfiesteria* or *Pfiesteria*-like organisms, to initiate case-control studies when new incidents of illness purported to be due to exposure to the toxins are identified, and to develop a biological test of human exposure (biological marker) so that when the structures of these toxins are identified, a rapid response can be assembled between the CDC and state health departments.

The National Institute of Environmental Health Science has begun a \$400,000 research project to isolate and chemically characterize *Pfiesteria*-toxins so that critical

exposure levels for health effects associated with human environmental exposures can be estimated and the potential risks to human health can be determined.

Department of the Interior. The U.S. Fish and Wildlife Service is targeting state-selected sites for inclusion in an ongoing National Wild Fish Health Survey. Fish collected will be examined for a suite of pathogens and parasites that may be contributing to *Pfiesteria*-associated problems.

The U.S. Geological Survey is seeking to better understand the movement of nutrients into waterways and the relationship between nutrient input from watersheds and water quality in Chesapeake Bay. In addition, recent studies of Chesapeake Bay sediment cores by USGS scientists have confirmed that *Pfiesteria*-like organisms have existed in the area for at least several thousand years.

Congressional Action. Congress has taken several steps to address scientific and policy questions concerning *Pfiesteria* and other potentially harmful aquatic blooms. An oversight hearing on *Pfiesteria* and its impact on fishery resources was held on October 9, 1997, by the House Resources Subcommittee on Fisheries, Conservation, Wildlife, and Oceans. The House Government Reform and Oversight Subcommittee on Human Resources held an oversight hearing on the federal and state public health response to *Pfiesteria* on September 25, 1997. Also Representatives Gilchrest (who represents Maryland's eastern shore) and Stenholm hosted a bipartisan forum on phosphorus and water quality at the House Committee on Agriculture on November 3, 1997. Members used information from these sessions to develop legislation authorizing a *Pfiesteria* research program and research grants (H.R. 2565/S. 1219). The research program proposed in these bills would be administered by EPA, the Department of Commerce, USDA, and Department of Health and Human Services. The Senate Environment and Public Works Committee reported S. 1219 on November 4, 1997 (S. Rept. 105-132).

In addition, in appropriations bills for FY1998, Congress has provided specific funding for *Pfiesteria* research and related activities. In the bill providing funding for EPA (P.L. 105-65: Departments of Veterans Affairs and Housing and Urban Development, and Independent Agencies Appropriations Act, 1998), Congress appropriated \$3 million -- \$1.5 million for external research, and \$1.5 million to support response and monitoring efforts, public information, and cross-agency coordination and analysis. Additionally, that bill earmarked \$2 million in grants for sewage treatment plant improvements at plants on the Pocomoke River, Maryland, in response to concerns about pollutants that may be associated with fish kills in that waterbody.

Funding to deal specifically with *Pfiesteria* and related blooms was included in other FY1998 appropriations measures as well. NOAA was provided \$3.5 million for *Pfiesteria* monitoring and assessment activities as well as research on *Pfiesteria* and other harmful blooms (P.L. 105-119; Departments of Commerce, Justice, and State, the Judiciary, and Related Agencies Appropriations Act, 1998). As previously mentioned, P.L. 105-78 (Departments of Labor, Health and Human Services, and Education, and Related Agencies Appropriations Act, 1998) provided \$7 million for CDC's activities to address emerging issues of human health effects from exposure to *Pfiesteria*.

In these FY1998 appropriations measures, Congress sought to develop an appropriate balance between providing funds for defining the *Pfiesteria* problem (e.g., monitoring waterways) and money appropriated for addressing the concerns arising from *Pfiesteria*-like events (e.g., culturing the organisms, isolating and characterizing the toxins, developing diagnostic tests). Altogether, about \$13.5 million was appropriated for *Pfiesteria*-related activities in FY1998.

Policy Questions

Water Quality Management Issues

From a water quality perspective, specific pollution problems such as *Pfiesteria*, where they occur, may reflect a larger set of issues. If the scientific theories regarding the organism are proven to be correct, some of the water quality conditions that may be associated with its emergence — nutrient enrichment, in particular — also contribute to water pollution problems generally in the same areas and others nationwide. Nutrient over-enrichment of waters and algae blooms can depress oxygen levels and lead to fish kills, even where *Pfiesteria* is not present. From that perspective, *Pfiesteria* is not a singular problem. It is only one example of the challenge to improve quality in waters that experience nutrient enrichment, often from numerous sources. It does, however, represent the first instance where the public has associated human health risks with elevated nutrient levels in estuaries.

Data reported by states to EPA indicate that nutrients and bacteria are the leading causes of pollution in estuaries, where *Pfiesteria* has primarily been found, and that the principal sources of that pollution are urban runoff (discharges from storm sewers), municipal sewage treatment plants, septic systems, air deposition (motor vehicle exhaust and smokestacks, for example), and agriculture. It is difficult to determine which specific sources may be contributing to the conditions where *Pfiesteria* apparently thrives and other water quality problems exist. Thus, the first challenge for water quality managers is to assess point and nonpoint sources to quantify environmental effects of particular discharges, on a case-by-case basis.

However, because many scientists consider the linkage between nutrient pollution and *Pfiesteria* outbreaks to be uncertain, most scientists and resource managers do not believe that nutrient reduction alone will eliminate *Pfiesteria* problems. Nutrients alone may not be causing the problem, but they are one possible factor that humans can control through technology and management practices which affect land use. Further reduction in nutrient loads to aquatic systems may be beneficial for multiple reasons, but such actions do not guarantee solving the complex *Pfiesteria* problem. Thus, while nutrient reduction may be significant to achieving overall water quality improvements, it is too soon to know with any certainty how significant nutrient reduction might be in specifically addressing *Pfiesteria* and problems similar to it.

If sewage treatment plant discharges are implicated, permitting officials may tighten existing discharge limits in National Pollutant Discharge Elimination System (NPDES) permits which will result in added technological controls. If runoff from

farms or city streets is implicated, management is more complicated because, under current federal law (the Clean Water Act), these sources are regulated either by permitting or other programs, depending upon the size of the source. Generally, runoff from large animal feedlot operations (those with more than 1,000 animal units) and larger cities (those with populations greater than 100,000 persons) are regulated by NPDES permits. Runoff from other farms and smaller animal feedlot operations and cities are subject primarily to state-run management programs that rely largely on voluntary efforts to minimize runoff. The runoff from animal feedlot operations and smaller cities can be subject to NPDES permit requirements if the permitting authority so desires; however, many state NPDES authorities still use voluntary state-run programs for these sources.

Reauthorization of the Clean Water Act, which could occur in the 2nd Session of the 105th Congress, may give policymakers opportunities to consider what role that Act, and possible amendments to it, might play in addressing *Pfiesteria*-related and similar water pollution problems.¹⁰ In particular, the effectiveness of voluntary programs to manage nonpoint sources of pollution may be an issue. Similarly, policymakers may consider whether changes to the law's existing regulation of municipal, industrial, and agricultural point sources are needed to remedy coastal water quality degradation and conditions that may be associated with *Pfiesteria* outbreaks.

Agricultural Issues

Runoff or discharge of nutrients from animal production facilities (both open and confined) have been implicated in "*Pfiesteria* problems" in Maryland and North Carolina waters. Prior outbreaks in North Carolina have occurred in rural watersheds where agriculture dominates. In Maryland, suspicion is widespread that areas with concentrated livestock operations and large volumes of waste, particularly poultry farms on Maryland's eastern shore, may be important contributors of dissolved nutrients that could trigger rapid population growth by toxin-producing dinoflagellates. Manure is not the only possible agricultural source, since excessive application of commercial fertilizers can also cause nutrient enrichment of water.

The Maryland Department of Agriculture has gathered information to characterize agriculture in the Pocomoke River drainage, the largest of the "*Pfiesteria* problem" watersheds, more precisely.¹¹ Evaluators surveyed 129 of the 543 agricultural producers in the drainage. These producers manage more than 50,000 acres, less than a third of the 170,000 acres of cropland in the drainage. The survey revealed that corn or soybeans are grown on more than 80% of the crop acreage covered in the survey. Two-thirds of the producers in the drainage (366) raise poultry; these farmers raise 29 million birds annually. In addition, there are 17 swine, 17 livestock, and 2 dairy operations.

¹⁰ For additional information, see CRS Report IB97001, *Clean Water Act Reauthorization in the 105th Congress*.

¹¹ Maryland Department of Agriculture. *Preliminary Characterization of Agriculture in the Pocomoke Watershed*. Annapolis, MD: October 1997. 16 p.

Conservation practices are widely followed by the surveyed producers. More than 75% of crop producers have a soil conservation and water quality plan, and more than 70% cultivate their cropland under conservation or no-till systems. About 56% of the survey participants use nutrient management plans (about the statewide average), making these plans the third most common BMP after crop rotation and animal waste storage structures. On-site evaluations of the surveyed producers showed that almost 90% receive federal and/or state cost-sharing to implement BMPs in accordance with their plans. Most BMPs have been installed during the past decade. On-site evaluators concluded that 68% of the farmers were providing comprehensive protection to their farms using BMPs, and did not have any readily identifiable pollution problems.

Regarding animal waste management, the survey found that manure was being applied on 42% of the cropland, and that 85% of the crop producers were applying manure to cropland. Almost two-thirds of the producers receive at least a portion of their manure from someone else, and 22% of the farmers transfer all their manure to others. Almost three-quarters of the livestock producers use an animal waste storage facility; the remainder apply it directly to the fields or temporarily stockpile it. The top factor influencing a farmer's decision about when to apply manure to crops was the nutrient management plan, identified by 42% of the participants.

These data indicate relatively widespread conformance with accepted conservation practices and participation in conservation programs. If it is determined that excessive nutrients from farm activities are significant in causing the *Pfiesteria*-related problems, then it seems unlikely that the current approach to BMPs and voluntary participation would provide a satisfactory reduction in nutrients. Nutrient management plans on most farms reportedly have focused on managing nitrogen, under the assumption that effectively managing nitrogen means that phosphorous is managed as well. But research indicates that soils can become saturated with phosphorous as a result of applying animal manures to meet nitrogen need, and that phosphorous can be lost to surface and ground water when soils are saturated with this element, even when nitrogen guidelines are being met.

The NRCS is revising its nutrient management policy to address all nutrients rather than just nitrogen. The new policy will require access to adequate amounts of land to dispose of the phosphorous. This change will result in less manure being applied to some fields where phosphorus is already excessive.¹² This, in turn, will increase the supply of surplus manure in some watersheds. Group and community action, and probably some innovative approaches, may be required to address some of these problems. Approaches that scientists are examining include long-distance shipping, composting, burning, and using biotechnology to improve animal feeds. On October 29, 1997, the poultry industry announced a 4-year research program costing

¹² Tom Simpson, coordinator of Chesapeake Bay Agriculture Programs for the Maryland Department of Agriculture, pointed out during his presentation at the House Agriculture Committee forum on Nov. 3, 1997, that more than 90% of the soils in Maryland's lower eastern shore are at or above optimum levels for phosphorous.

\$1 million and aimed at curbing pollution from agriculture.¹³ This proactive proposal has reportedly been greeted with skepticism by some who believe that the magnitude of the effort is less than commensurate with the magnitude of poultry's role in nutrient enrichment.

As discussed above, large confined animal feeding operations (CAFOs, feedlots with more than 1,000 animal units) are subject to discharge permit requirements under the Clean Water Act, and other animal feeding operations may be designated as CAFOs if they pose a threat to water quality or use. The regulatory requirements for CAFOs generally prohibit discharge of waste water pollutants into navigable waters. Still, unpermitted waste discharges and spills from feedlots in a number of states, and the recent attention to *Pfiesteria*, have raised questions about the adequacy of regulation and enforcement and whether the size threshold for CAFOs should be lowered to bring more operations under regulation. Several states have enacted or are considering measures that would impose additional waste management controls on animal production facilities, beyond current federal rules.

Agricultural interests continue to hold that no scientific evidence proves that farm activities cause or even contribute to toxic dinoflagellate blooms. They also cite the Maryland Department of Agriculture survey to back their claim that most producers in these watersheds (at least in Maryland) participate in voluntary programs to implement conservation plans and properly install and maintain BMPs. But no data show how the installation, maintenance, or operation of these practices have affected water quality. Because of the lack of information about the causes of these outbreaks, agricultural interests believe that they have been unfairly singled out before the full dimensions of the problem and its more effective solutions are known. Even if nutrient enrichment from poultry farms turns out to be at the heart of this problem, decreased nutrient contributions from farms may not reduce the problems for several years.

Critics believe that agricultural activities are either the primary cause of toxic dinoflagellate blooms or are a major contributing factor. They believe that stronger management of manure could improve water quality, and that stricter pollution control regulations combined with more effective enforcement is necessary. Given the severity of the problem, many advocate immediate action, even though research to assess the causes of this problem has not been completed. Maryland's Blue-Ribbon Panel rejected some proposals for stronger controls, such as limiting overall chicken production throughout the state, but recommended new pollution control measures that would have to be enacted by the Maryland legislature.¹⁴

Human Health Issues

Scientists still need to document which and how many dinoflagellate species produce toxins that are potentially harmful to humans. Research is needed to

¹³ "Poultry Group Offers \$1 Million for Study." *Washington Post*, Oct. 30, 1997, p. D4.

¹⁴ The Blue Ribbon Panel's final report contains discussions of agricultural topics. In addition to the text of the report, several appendices provide additional insights.

determine which species may occur in high risk areas that are currently associated with fish kills, disease, and human ailments. Until scientists identify the number of toxic species involved, the active ingredients in these species' toxins, and the toxins' modes of action, and characterize the organisms' life cycles, there remain many unanswered questions about their potency and how they could affect human health. For example, no human illnesses have been reported after eating *Pfiesteria*-stricken fish, so it is unknown whether the toxins accumulate in seafood, affect human internal organs, or may be destroyed during cooking.

There is concern that shellfish, particularly filter feeders such as oysters and clams, could harbor *Pfiesteria* and the toxins. Two FDA studies of oysters that were exposed for one week to heavy doses of *Pfiesteria*-toxins established no association with the toxins. It is unclear whether the toxins break down or are diluted in the air or water. However, the toxicity appears to dissipate quickly.

It is also unclear how many different dinoflagellate species or other organisms may be producing toxins. There could also be variations in the toxins. It is clear that exposure to these toxins poses a health risk, but the boundaries of that risk have not been identified. Until some of these questions are answered, it is difficult to assess the implications of these recent fish kills on human health.

Fisheries and Estuarine Ecosystem Issues

Estuarine Ecosystem. Little concern has been raised that *Pfiesteria*-like blooms could harm the reproductive success of economically important fish stocks, and there has been no reported reduction in menhaden or other affected fish stocks. In addition, it is unknown whether pre-existing conditions within fish populations, such as weakened immune systems, could make menhaden more susceptible to toxins from *Pfiesteria*-like species.

Limited information is available on the habits and habitats of *Pfiesteria* and related species, and little is known about how this organism may spread between estuaries, particularly whether ballast water or the transport of fish products may be factors in spreading these species. Until the identity of organisms responsible for the recent fish kills is determined conclusively, considerable doubt remains as to how best to address human health and resource concerns. The life cycle of *Pfiesteria*-like species is not well known, and what triggers *Pfiesteria*-like organisms to transform between different toxic and non-toxic life stages is not well understood. In addition, potential control mechanisms have not been widely discussed, including the potential for suppressing blooms by chemical control, aeration, clay particles, or other means. Are there natural environmental features, including competing plankton populations, that could be manipulated to control *Pfiesteria* or cause it to return to or remain in non-toxic forms?

In addition to the potential impacts of *Pfiesteria*-like organisms, the roles of other components of estuarine ecosystems, such as bacteria, viruses, parasites, and non-dinoflagellate planktonic organisms, may also need to be assessed. Focusing concern on one component (*i.e.*, *Pfiesteria*-like organisms) of an entire ecosystem may fail to identify or eliminate other causes for fish kills and poor fish health. Such

short-sightedness could be costly in terms of inadequate and possibly inappropriate research efforts and ineffective and misdirected corrective measures.

Commercial Fishing. The main effects on commercial fishing result from the closure of sections of estuaries to minimize contact with possible *Pfiesteria* toxins. However, a study by the North Carolina Department of Environment and Natural Resources¹⁵ found that, although commercial fishermen were forced to change their behavior when sections of the Neuse Rivers were closed, the economic impacts on those fishermen were minimal, because they were able to adjust harvesting location..

Retail Seafood. The retail seafood industry has been affected in two ways: 1) river closures may restrict the supply of local seafood to retailers, ultimately resulting in higher seafood prices and less seafood sold at the retail level; and 2) decreased consumer confidence in the quality of local seafood which causes consumers to demand less seafood, resulting in a decrease in sales and a decrease in prices at the retail level. This decrease in demand may occur regardless of the ultimate findings on human health effects and quality of seafood. The intense media coverage of *Pfiesteria* in both North Carolina and Maryland diminished consumer confidence in seafood, despite public relations efforts of state officials. The logical conclusion would be an ambiguous effect on the retail price of seafood (depending on whether the supply or demand shock had more impact) and an unambiguous decrease in seafood retail sales.

State and federal managers have generally taken a conservative approach to questions of whether *Pfiesteria*-like species may pose any concern for seafood safety. Maryland managers prohibited all commercial and recreational fishing in affected waters, and have advised citizens not to consume fish with lesions or those that appear to be diseased. Although no instances of tainted seafood or human illness from eating fish exposed to *Pfiesteria* have been reported, health officials advise caution since so little is known about *Pfiesteria*. Commercial and economic interests, however, remain concerned that the occurrence of *Pfiesteria* diminishes consumer confidence in seafood safety generally, and that consumers may make broad assumptions about seafood sanitation and quality leading them to reject safe seafood. In Maryland, anecdotal information suggests that seafood sales may have declined as much as 45-50% by late September/early October 1997.¹⁶ The issues to be addressed are whether additional efforts may be necessary to promote seafood safety when *Pfiesteria* is present and to assist the seafood industry in addressing consumer confidence concerns with seafood.

Recreation and Tourism. River closures and concerns about water quality have negatively affected recreational users and tourism in general. As river users and tourists shift their activities away from questionable locations (unless closures are widespread), local tourism-dependent businesses experience a decline in revenues.

¹⁵ Diaby, S. *The Economic Impacts of Neuse River Closures on Commercial Fisheries*. North Carolina Department of Environment and Natural Resources, 1996.

¹⁶ Yost, Mark. "Pfiesteria Outbreak Hurts Economies of Chesapeake Bay." Dow Jones News Service, October 7, 1997.

A Larger View

Concern has been expressed worldwide that harmful aquatic blooms may be increasing in frequency and severity.¹⁷ Others question this conclusion, suggesting rather that our improved ability to detect and report such events has only made their occurrence more apparent. While many initially presumed that *Pfiesteria* or related organisms were the problem and that farming practices were the cause, state and federal agencies have conceptualized a coordinated response that focuses broadly on gaining the scientific data necessary to better understanding this problem and how to address its effects.

Fish kills regularly occur, for numerous reasons — water quality, net dumping, infectious agents, harmful blooms, chemical contaminants, *et al.* All of these factors are relevant and need to be considered when addressing recent fish kills. In addition, many small dinoflagellate species inhabit coastal and estuarine waters. Some of these species produce toxins that cause fish kills and pose public health risks. It is unwise to assume that *Pfiesteria* or morphologically similar organisms have caused all the recent events. Thus, it will likely require a multi-faceted, multi-agency approach to address all the factors related to recent fish kills, disease, and human health risks.

¹⁷ For example, see: Donald M. Anderson, "Red Tides," *Scientific American*, v. 271 (August 1994): 62-68; Jeremy Curfews, "The Fringe of the Ocean — Under Siege from Land," *Science*, v. 248 (Apr. 13, 1990): 163-165; and Elizabeth Culotte, "Red Menace in the World's Oceans," *Science*, v. 257 (Sept. 11, 1992): 1476-1477.

Selected Sites About *Pfiesteria* on the World Wide Web

Federal

U.S. Geological Survey

<http://www.usgs.gov/outreach/fishlesions>

U.S. Department of Agriculture

<http://www.nal.usda.gov/wqic/pfiest.html>

Environmental Protection Agency

<http://www.epa.gov/OWOW/estuaries/pfiesteria/>

Interagency

<http://www.gmpo.gov/pfiesteria.html>

State

North Carolina Department of Environment and Natural Resources

<http://www.ehnr.state.nc.us/EHNR/files/pfies.htm>

Virginia Department of Health

<http://www.vdh.state.va.us/misc/alert.htm>

Maryland Department of Natural Resources

<http://quantum.gacc.com/dnr/Hot/study.html>

Maryland Department of Agriculture

<http://www.mda.state.md.us/pocomoke/poc.htm>

Maryland Department of Health and Mental Hygiene

<http://www.charm.net/~epi9/news1.htm>

Delaware Department of Natural Resources and Environmental Control

<http://www.dnrec.state.de.us/tpff1.htm>

Academic

Virginia Institute of Marine Science

<http://www.vims.edu/welcome/news/pfiesteria>

University of Maryland Sea Grant Program

<http://www.mdsg.umd.edu/fish-health/pfiesteria>

University of Maryland, College of Agriculture and Natural Resources

<http://www.agnr.umd.edu/pfiesteria/agpros.htm>

North Carolina State University Botany Laboratory

http://www2.ncsu.edu/unity/lockers/project/aquatic_botany/pfiest.html

University of North Carolina

<http://www.unc.edu/depts/cmse/science/pfiesteria.html>

Woods Hole Oceanographic Institution

<http://www.redtide.whoi.edu/hab/>

Other Miscellaneous

<http://www.annonline.com/interviews/970429/related.html>

http://www.neuseriver.org/pfiester_1.html

<http://www.universe.digex.net/~bnr/pfiester.html>

<http://www.seanet.com/~tzhre/pfiest.htm>

<http://www.wral-tv.com/news/wral/techtalk/1997/0814-pfiesteria>

<http://www.pfiesteria.com>

<http://www.pamlico-nc.com/PamNews/front.htm>

http://discovery.com/cgi-bin/forums_view/dir/Discovery%20News/Pfiesteria/Experts

Selected References

Ahrenholz, Dean W., James F. Guthrie, and Ronald M. Clayton. *Observations of Ulcerative Mycosis Infections on Atlantic Menhaden (Brevoortia tyrannus)*. U.S. Dept. of Commerce, National Oceanic and Atmospheric Administration, NOAA Technical Memorandum NMFS-SEFC-196, June 1987. 11 p.

- Barker, Rodney. *And the Waters Turned to Blood: The Ultimate Biological Threat*. Simon & Schuster, New York, NY, 1997. 346 p.
- Boesch, Donald F., et al. *Harmful Algal Blooms in Coastal Waters: Options for Prevention, Control and Mitigation*. NOAA Coastal Ocean Program, Decision Analysis Series No. 10, February 1997. 49 p.
- Boyle, Robert H. "Phantom." *Natural History*, v. 105, no. 3 (March 1996): 16-19.
- Broad, William J. "Battling the Cell from Hell." *National Wildlife* (Aug./Sept. 1997): 10.
- Glasgow Jr., Howard B., et al. "Insidious Effects of a Toxic Estuarine Dinoflagellate on Fish Survival and Human Health." *Journal of Toxicology and Environmental Health* 46 (1995): 501-522.
- Hileman, Bette. "Pfiesteria Health Concerns Realized." *Chemical and Engineering News* (Oct. 13, 1997): 14-15.
- Kriz, Margaret. "Pfiesteria Hysteria." *National Journal* (Sept. 13, 1997): 1783.
- Noga, E. J., et al. "Novel Toxic Dinoflagellate Causes Epidemic Disease in Estuarine Fish." *Marine Pollution Bulletin*, v. 32, no. 2 (1996): 219-224.
- "Results of The Public Health Response to Pfiesteria Workshop — Atlanta, Georgia, September 29-30, 1997." *Morbidity and Mortality Weekly Report*, v. 46, no. 40 (October 10, 1997): 951-952.
- U.S. Congress. House. Committee on Government Re29 and Oversight. Subcommittee on Human Resources. *Federal and State Public Health Response to Pfiesteria Outbreaks*. Unpublished hearing, September 25, 1997.
- U.S. Congress. House. Committee on Resources. Subcommittee on Fisheries Conservation, Oceans, and Wildlife. *Pfiesteria and Its Impact on Fishery Resources*. Unpublished hearing, October 9, 1997.

APPROVED BY:
Gerald K Waller
Gerald K Waller

**LAW ENFORCEMENT COMMITTEE
MINUTES
Wednesday, March 19, 1998
Destin, Florida**

Chairman Jerry Waller called the meeting to order at 8:33 a.m. The following members and others were in attendance:

Members

Jerry Waller, 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
John Sherlock, USCG, New Orleans, LA
Robert Stone, NMFS, St. Petersburg, FL (*proxy for E. Proulx*)

Others

Buster Brown, Texas Senate, Austin, TX
Tom Herrington, FDA, Stennis Space Center, MS
Miriam Stuckey, FDA, Washington, D.C.
Frank Wakefield, USCG, Mobile, AL
B.D. Williams, FMP, Pensacola, FL

Staff

Cindy Yocom, Staff Assistant, Ocean Springs, MS

Adoption of Agenda

By consensus, the LEC agreed to move item four, Shellfish Patrol Evaluation Pilot Project, to the end of the agenda.

Adoption of Minutes

By consensus, the minutes of the meeting held October 15, 1997, in Gulf Shores, Alabama, were approved as written.

United States Coast Guard Report

Jerry Waller welcomed the Coast Guard's new representative, John Sherlock, to the LEC. Lieutenant Sherlock reported that the Eighth Coast Guard district enforces numerous maritime laws within its area of responsibility. There are 15 multi mission stations and 13 coastal patrol cutters in the eighth district to enforce all applicable federal laws and to support the following missions:

Environmental Protection. There are more than 6,500 oil and gas producing wells in the eighth district which produce more than 324 million barrels of crude oil and 4.5 billion cubic feet of natural gas annually.

Counter Drug/Fisheries/Migrant Interdiction. More than 8,000 law enforcement boardings are conducted annually. The eighth district encompasses five of the top seven fishing ports (based on sales) in

the country. These ports account for nearly 40% of the catch of U.S. commercial fishing. The eighth district aggressively patrols the U.S./Mexico border to enforce the Lacey Act, to ensure our fishery resources are being properly managed, to help deter narcotic smuggling into the U.S., and to interdict illegal immigrants at sea. TEDs compliance continues to be of high interest in the eighth district.

Boating Safety. The eighth district actively educates the boating public on boating safety in concert with the Coast Guard Auxiliary. The eighth district aggressively enforces boating while intoxicated (BWI) laws.

Search and Rescue. The typical year in the eighth district is comprised by assisting approximately 7,900 mariners with 770 lives saved. More than \$37.5 million in property is saved and more than 6,300 cases are prosecuted.

The eighth district also assists in enforcing commercial fishing vessel safety regulation and maintaining 24,000 aids to navigation.

Frank Wakefield, U.S. Coast Guard Mobile Group, reported on two joint operations which consisted of officers and vessels from the Alabama Department of Conservation and Natural Resources; the Mississippi Department of Wildlife, Fisheries, and Parks; and U.S. Coast Guard Stations Pascagoula, Mobile, and Pensacola. One operation consisted of 60 officers and 14 vessels on the water. This effort focused on boating while intoxicated, basic safety regulations, and illegal fisheries violations. More than 220 vessels were boarded in one day and 21 state cases were made. F. Wakefield noted that approximately 40% of red snapper fishing is off the coast of Alabama. Another joint operation allowed 45 officers and 12 vessels to check for illegal snapper fishing before the season began. Joint operations provide a continuing indicator of the fleet of vessels off the coast. Another joint operation is the Maritime Smuggling Enforcement Group. This group consists of all law enforcement agencies along the north-central Gulf. The primary focus of the group is illegal drug enforcement, but all smuggling violations are enforced.

National Marine Fisheries Service Enforcement Report

R. Stone, *proxy for Eugene Proulx*, reported that a number of significant cases are ongoing including one in Louisiana where the NMFS is working with LDWF. There are also two significant cases in the Florida panhandle area. One of which is near completion and being reviewed by counsel; the other is still under investigation. A number of significant investigations are ongoing in the South Florida area. One involves an individual who was arrested for illegal fish trapping activity and wire fraud. For approximately two years, NMFS agents have been investigating two cases along the South Carolina coast. Those cases will be complete within the next three to four months.

The NMFS has developed and staffed a Protected Resource Team. Three candidates are graduating from the federal law enforcement training center next week and will be reporting to their duty stations. The team will consist of two rigid-hull inflatable boats and six uniformed officers. One boat will be stationed in the Gulf in Mississippi. The second vessel will be stationed on the East Coast in Titusville, Florida. Three officers are assigned to each vessel.

The NMFS has one fishery patrol officer vacancy that should will be filled within the week. The NMFS allocation for fishery patrol officers is seven and full upon filling that position. One agent is retiring in the Virgin Islands, and that position will be backfilled to Puerto Rico.

State contracts are progressing. The state contract for South Carolina is being finalized in Washington. A second contract for Louisiana is in the beginning stages.

Vessel Monitoring System (VMS) has historically been used for monitoring land vehicles (armored trucks) carrying cash. Some interstate transportation companies also use VMS to track trucks. The NMFS is developing the technology to track vessels used in fishing activities. Several groups volunteered to put transponders on their boats for a pilot project. The project is expensive due to the equipment and training necessary to correctly read data from the equipment, but VMS has potential as an enforcement tool. It can give the position of the boat, indicate when a boat enters a closed area, and indicates when fishing gear is engaged. Depending upon how the system sensors and reporting alarms are configured, VMS can indicate a number of items regarding the operation of a boat. Basically, it can monitor a fishing fleet.

State Reports

Florida - B. Buckson reported that he attended the Blue Crab TTF meeting on Monday. The fishery management plan revision is developing quickly and should be presented at the October meeting. The group has one request from the Florida and Alabama law enforcement representatives. A summary of blue crab rules from 1975 will be presented in the FMP. This brief summary will help explain some fluctuations in landings as they correlate to changes in regulations. The task force members from Mississippi, Texas, and Louisiana will gather this information themselves, but ask Florida and Alabama LEC representatives to compile and send this information to GSMFC.

B. Buckson reviewed state issues including the limited entry program for stone crab fishing. This initiative stems from the fishermen within the industry. They are very cautious, and the program is progressing slowly.

In the blue crab fishery, one issue concerns fishermen using what they called a blue crab trap in federal waters. These blue crab traps were designed with a horizontal throat and were actually being used as fish traps. The rule regarding construction design of the trap was revised in January and no longer allows vertical throats. Florida has also made it illegal to place blue crab traps in federal waters off the State of Florida.

The state rule regarding degradable panels in the blue crab trap currently has five options; however, many fishermen are coming up with better ideas. It is expected that these fishermen will approach the Florida Marine Fisheries Commission to revise the rule.

B. Buckson requested the input of the LEC regarding a criminal case. In the State of Florida, blue crab traps have historically been constructed of wire. A motion to dismiss has been filed on a case made against a person using a "blue crab trap" constructed of wood. The motion to dismiss claims it is an unconstitutional law. They claim there is an interstate commerce issue at hand and everyone would go out of business if required to convert from wood to wire traps. B. Buckson asked the group if any state had ever seen wooden blue crab traps. No one had ever seen a wooden blue crab trap.

B. Buckson reported that they are still dealing with a dolphin-feeding problem in Panama City and Destin. The Marine Mammal Protection Act says that it is illegal to feed dolphins in the wild. Over the years, there has been a great tourism business built up by taking people out to see and feed the dolphins.

At the last meeting of the Florida Marine Fisheries Commission, they announced their intention to sue the National Marine Fisheries Service for not implementing the bycatch reduction device (BRD) rules in the federal waters.

In July 1995, the state limited the use of nets which primarily restricted the use of gill nets. Since then, four legislative sessions have tried to make the laws enforceable. There are changes ahead this year.

Alabama - J. Waller reported that Alabama has an area approximately 20-25 miles offshore which is designated as an artificial reef area. The Corps of Engineers has allowed the state to issue permits for fishermen to build artificial reefs there. Proposed legislation would make illegal dumping of materials a class A misdemeanor for the first offense with a fine of not less than \$5,000 nor more than \$10,000. Subsequent offenses are felonies punishable by \$10,000 and 30 days in prison or both. This law can be applied to vessels that are registered in Alabama even though the offense may be in federal waters. What language is available that would allow the state to apply this law to vessels whose home-port is Alabama? All of Alabama's charter boats are documented vessels and do not have any state licenses. In the State of Florida, all documented vessels must also be registered by the state. J. Waller noted another problem with the law is that the violation must be witnessed by a state or federal enforcement officer in support of conviction for the violation.

The state has asked NOAA General Counsel to research this situation. J. Waller cited federal law which states that no person may knowingly dump in the EEZ any article that interferes with fishing or obstructs or damages the fishing gear of another. He noted that shrimp boats are trawling and pulling up material from the illegal area. The material is marked with a permit number, but the permittee will probably claim that the material drifted from a legal area. As yet, no response has been received from NOAA General Counsel.

Another issue in Alabama is the lack of a paper trail for finfish from foreign countries. What are the other states' regulations regarding this regulation? Louisiana's covers purchases or sales anywhere and requires species, date received, received from, etc. If it is coming directly from out of the country, they also inspect customs paperwork.

An Alabama officer recently ran into a problem where a recreational fisherman was observed bringing snapper to a commercial dealer. When the officer asked the dealer where the paperwork was for the fish, the dealer replied that he was only filleting the fish for someone. In Louisiana, this problem was eradicated by the condition upon granting a wholesale license, retail license, restaurant or transport license that all fish in the possession on the premises of a licensed facility or a licensed vehicle shall be deemed for use for commercial purposes only.

J. Waller also reported that he served on the NMFS Red Snapper Reconsideration Board for the Gulf. Snapper licenses have been divided into two categories, Class I and Class II. Some fishermen did not meet the criteria to receive a license because their vessels were leased during the reef fish permit deadline. Approximately 90% of the appeals were based on this situation. The group recommended the Council review this particular situation.

Mississippi - T. Bakker reported that the Mississippi legislature has been in session since January. One of Mississippi's fishery problems is with illegal gill net fishing. The Department has tried to get the legislature to address those problems through enhanced penalties and proper definition of nets. The state must work through the justice court system where the penalties are not harsh enough. Legislation was not passed to address these problems.

Seven new positions were given to the Department last year, but there was no funding for those officers. This year, funding was received, and seven new officers will begin on April 1. The total number of marine officers on the Gulf Coast is now 37. The officers attend a highway patrol academy, a five-week inshore training session, and fourteen weeks in service training in marine enforcement (boating safety, marine fisheries regulations, USCG regulations, NMFS regulations, etc.). These officers have more respect for the system, the Department, and higher ranking officers. The Department also has one year's probation for new hires. The Department has made great strides in personnel training.

Louisiana - J. Mayne reported that Louisiana is beginning a trip-ticket program. He presented overheads of the various reporting forms which will provide information to both biologists and enforcement. LSU Cooperative Extension Service is providing assistance with workshops to acquaint dealers with the ticket program. From January 1 through March, dealer input will be sought, materials will be developed for the education program, and the trip ticket design will be finalized. Next month, regulations will be revised to define what fisherman will be responsible for and what the dealer will be responsible for in this program. A pilot program with major dealers will be instituted in July, dealer workshops will be held September through November, and January 1998 full implementation of the program will begin. One ticket was initially designed, but after input from dealers, it was determined that three different tickets were needed (oysters, shellfish, finfish). The tickets are consecutively numbered and contain spaces for the commercial fisherman's name, licence number, area fished, fisherman's signature and dealer's signature on every invoice. The fisherman will receive a copy, the dealer retains a copy, and one copy is sent to the Department. The dealers will be provided with a series of tickets in sequence. If a ticket is voided, a copy of the voided ticket must still be sent to the Department. Once tickets are received by the Department, they will be scanned. An independent contractor will actually key the data.

Texas - D. Johnston reported the legislature passed a bill last year that gave TPWD the authority to implement a limited entry or crab management plan. There have been several scoping meetings and language has been developed to implement the plan. Limited entry will be based on historical participation in the fishery. Changes have been made to crab trap and buoy markings as well as the crab license and vessel plate. The Department has worked with industry to define flagrant violations that will be used for revocation and license suspension. Another issue that has been resolved is the problem with undersized crabs being transported out of the state. Regulation allowed a fisherman to keep 5% undersize crabs for bait purposes. The undersized crabs had to be kept in a separate container, but this was really not working. When the fishermen got to shore, they could put all the crabs back together. Consequently, Texas had complaints from other states on the importation of undersized crabs from Texas. This language has been changed. Fishermen are allowed to keep 5% undersized but they can be sold for bait purposes only. If undersized crabs are sold for anything other than bait, a violation has been committed. The management plan is on the register and should be adopted in April. It would then go into effect in September.

The Flounder Task Force will present the fishery management plan in October. He will send the law section to each state to update for any law changes since the last revision. Once the draft management plan is complete, he will have the document distributed for their review.

ISSC Executive Board Report

J. Waller noted that the 1998 meeting will be held in New Orleans. Reelections of the Region 5 (Texas, Louisiana, Mississippi, and Alabama) regulatory representative to the Executive Board will be held at that time. He encourages law enforcement to run for this position currently held by himself. The final video on protecting America's shellfish harvest, *Call to Action*, has been mailed. The video was a cooperative ISSC effort which included enforcement and the FDA in production. The video is an excellent educational tool, and the states are encouraged to show the video to state judiciaries and legislators to bring attention to the impact of illegal shellfish harvesting on the public. J. Waller intends to show the video during his report to the Commission Business Session.

Update on Council Letter Regarding Snapper Regulation in Mexico

At the GSMFC 48th Annual meeting, the LEC requested the Commission solicit support from the Gulf of Mexico Fishery Management Council in regard to the snapper regulations that are being developed in Mexico. The motion was approved, and a letter was written to the Council recommending that correspondence be sent to Mexican officials recommending proposed snapper regulations on size and season be consistent with those in the United States. This action was subsequently approved by the Gulf Council

and Council chairman. A draft letter has been written and is currently being reviewed by the State Department.

Import Documentation

At the GSMFC 48th Annual meeting, E. Proulx moved to request formal Commission endorsement of Mexico's program to strengthened import documentation. The motion was approved by the LEC and presented to the Commission Business Session. The action failed at that level. R. Stone requested this item be deferred to the next meeting for further discussion.

Shellfish Patrol Evaluation Pilot Project

On November 5, 1995 and April 18, 1996, the U.S. Food and Drug Administration held meetings with a working group consisting of members from the NMFS and the USCG to review the National Shellfish Sanitation Program's Patrol Policy Document requirements. The outcome of these meetings was the recommendation to establish a standard for patrol frequency based on the assessment of risk involved in illegal harvesting of shellfish in closed growing areas. The participants recommended that a pilot assignment be implemented to determine the feasibility of rating criteria that could impact the level of risk such as amount of shellfish, market value of shellfish, ease of harvest, difficulty in marketing the shellfish, and difficulty in patrol. The Shellfish Patrol Pilot assignment was completed in March 1997. Data obtained from the assignment showed inconsistencies in how some state officials and FDA Shellfish Specialists interpreted the scoring criteria and answered the questions. On July 17, 1997, the FDA presented the results of the patrol field assignment along with the proposed policy document to members of the Interstate Shellfish Sanitation Conference Patrol Committee. The members unanimously agreed that a revision of the patrol field assignment was warranted based on the inconsistency of the results.

Ms. Miriam Stuckey, FDA, presented an exhaustive review of the Patrol Evaluation Pilot Program document to the LEC. Members of the LEC concluded that the need for a basic document exists. The document is to help ensure that the resource is safe for public consumption. A basic document will give a reference for use in problem areas. However, the document should not be so cumbersome that it places an additional burden on states that are not experiencing problems. The FDA should understand and recognize existing training and patrol of shellfish areas by the states.

The LEC agreed that shellfish harvesting case tracking systems should contain the following [two] elements:

- complaints relating to violation of shellfish harvesting regulations
- citations/summonses for violation of shellfish harvesting regulations.

In some states, the disposition and fines from illegal harvesting cases are not available through enforcement divisions. This information is, however, available through state court systems. In fact, a heightened emphasis might be placed on these cases if the FDA requested the information on illegal shellfish cases directly from the justice system. Enforcement should not be evaluated on information that is not usually tracked by enforcement and would cause an undue burden on the states' enforcement divisions.

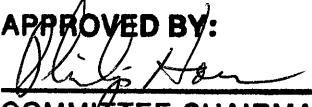
The LEC recommended that the minimum training standard for patrol officers should include the following [three] elements:

- basic law enforcement training
- laws and regulations relating to shellfish harvesting
- elements for a successful case relating to shellfish harvesting violations.

The LEC thanked Ms. Stuckey for her review of the document. They also expressed their appreciation of her willingness to listen to state representative's comments on the document. Ms. Stuckey

assured the Committee that their comments will be taken into consideration during the revision of the document.

There being no further business, the meeting adjourned at 4:30 p.m.

APPROVED BY:

COMMITTEE CHAIRMAN

**COMMERCIAL/RECREATIONAL FISHERIES ADVISORY PANEL
MINUTES
Wednesday, March 18, 1998
Destin, Florida**

L. Simpson called the meeting to order at 8:30 a.m., with the following panel members in attendance:

Members

Scott Riley, Tallahassee, FL
David Dexter, CCA, Mobile, AL
Pete Barber, Alabama Seafood Association, Bayou La Batre, AL
Bob Fairbank, Gulfport, MS
Philip Horn, Clark Seafood, Pascagoula, MS
Randy Gros, Marrero, LA
Greg Faulkner, Milton, LA
Pat Murray, CCA, Houston, TX
Tom Smith, Seafood Wholesalers, Inc., Corpus Christi, TX

Others

Jeff Brown, NMFS, St Petersburg, FL
Cynthia Sarthou, GRN, New Orleans, LA
Bob Jones, Southeastern Fisheries Association, Tallahassee, FL
Stewart Jacks, USFWS, Corpus Christi, TX
Michael Bailey, NMFS, Silver Spring, MD
Vernon Minton, ADCNR, Gulf Shores, AL
John Roussel, LDWF, Baton Rouge, LA
Borden Wallace, Daybrook Fisheries, Empire, LA
Doug Frugé, USFWS, Ocean Springs, MS

Staff

Larry B. Simpson, Executive Director, Ocean Springs, MS
Ron Lukens, Assistant Director, Ocean Springs, MS
David Donaldson, SEAMAP Program Coordinator, Ocean Springs, MS
Steve VanderKoooy, IJF Program Coordinator, Ocean Springs, MS

L. Simpson began the introductions of the audience in attendance as well as the Commission staff.

Larry Simpson, Executive Director of the Gulf States Marine Fisheries Commission, started his career as a school teacher and coached football and baseball while working on a Masters Degree from the University of Southern Mississippi. He completed his degree at the University of South Alabama. He came to the Commission in 1978 as Assistant Director under Charlie Lyles and was hired as Director following Mr. Lyles' retirement in 1984.

Ron Lukens, Assistant Director of the Commission, is in charge of the Sportfish Restoration activities at the Commission and works with the Wallop-Bureaux program.

Jeff Brown, NMFS office in St. Petersburg, Florida, is involved with the liaison activities between the Commission and the states for the grants management division. He helps process the cooperative agreements that universities, the states and the Commission are involved with.

Cynthia Sarthou, GRN in New Orleans, LA, is an environmentalist representative who is a faithful attendee at the Commission and is the chair of the Gulf of Mexico Fisheries Management Council's Habitat Subcommittee.

Dave Donaldson, staff, is the SEAMAP (Southeast Area Monitoring and Assessment Program) Coordinator at the Commission.

Bob Jones, Southeastern Fisheries Association, has been involved with marine fisheries for many years serving on the Council and through his organization.

Stewart Jacks, Fish and Wildlife Service in Corpus Christi, Texas, is involved with the reserve and sanctuary program for the US Fish and Wildlife Service.

Steve VanderKooy, the Interjurisdictional Fisheries Program Coordinator for the Commission, handles the mirror image program of the Council dealing with near-shore species rather than off-shore species.

Philip Horn, Mississippi's commercial representative, owns Clark Seafood in Pascagoula and serves currently on the Council. Clark Seafood is a processing company that also owns commercial fishing vessels. Their markets are all over the country, primarily producing red snapper, but also butterfish and other herring species. Clark Seafood is a family business founded by Philip's father and is run by his father, himself and his two brothers. Philip's term with the Gulf Council ends July, 1998.

Tom Smith, Texas' commercial representative, works with Seafood Wholesalers in Corpus Christi, a full service seafood distributor for much of Texas. Tom runs four docks which handle snapper, black drum, and flounder. In addition Seafood Wholesalers custom processes for restaurant and hotels all over Texas and seven other states, and handles the lower Rio Grande valley and parts of Mexico.

Pete Barber, commercial representative from Alabama, is president of the Alabama Seafood Association in Bayou La Batre. Pete is also a shrimp broker, buying from the East Coast and selling to the processors along the Gulf, as well as retail outlets in New Orleans.

Greg Faulkner, commercial representative from Louisiana, owns and runs the Trawl and Repair Service Net Shop. They manufacture customized commercial and aquaculture gear and also manufacture various by-catch reduction gear. Greg also assists the universities in the development and testing of experimental gear.

Randy Gros, the recreational representative from Louisiana, started working in conservation in the seventies with the organization SOS (Save Our Specks) and has been with the CCA ever since its founding. Randy now sits on the Board of Directors of the CCA.

Virginia Herring is the Executive Assistant for the Commission.

Bob Fairbank, Mississippi's recreational representative, is with Southern Company (Mississippi Power), works with Mississippi Wildlife Federation and the Mississippi Nature Conservancy, and sits on the

national board of the National Wildlife Federation. Bob's interest is in water resources and water quality, and he currently serves on a wetlands committee in Louisiana. Bob is a lifetime recreational fisherman fishing waters from Mississippi to Louisiana.

Scott Riley, Florida's recreational representative from Tallahassee, has worked with the Florida DEP for two years, and currently works with the Department of Insurance. Scott has attended various fishing and boating expos for the DEP, working with the public. He has worked on issues such as net ban, licensing, and size limits. In addition, Scott has also been interacting with Florida's fishing industry representatives on various issues.

Pat Murray, Assistant Director of the CCA Texas, has been employed by the CCA for the last year and was a volunteer for the last ten years. Pat grew up in Galveston and was involved in both recreational and commercial fisheries as a fishing guide for several years.

David Dexter, Executive Director of Alabama CCA, has been involved with CCA for several years and is pleased with the growth and organization of the Alabama group. He welcomes anyone to come fish the "red snapper capital of the world".

Additional introductions were made during the meeting: John Roussel, Assistant Secretary of Louisiana Department of Wildlife and Fisheries; Borden Wallace, Daybrook Fisheries (menhaden industry); Doug Frugé, U.S. Fish and Wildlife Service and a partner of the Commission.

Overview of the Commission

L. Simpson offered a few thoughts regarding the value and future of the panel and began an overview of the Gulf States Marine Fisheries Commission and the role it has played in marine fisheries over the last forty-nine years. The Compact (P.L. 81-66) signed in 1949 is legally like a treaty among the five Gulf states to work in unison to manage their shared fishery resources. Three other commissions exist: the Atlantic and Pacific States Marine Fisheries Commission and the Great Lakes Fisheries Commission.

The Commission deals with near-shore species and in 1977 wrote the first management plan for shrimp. The Magnuson Act, 1976, was created by Congress to eliminate the foreign fishing fleets from U.S. federal waters (the Exclusive Economic Zone or EEZ). Subsequently, the Gulf of Mexico Fisheries Management Council has taken over the shrimp plan and all other federal water species like reef fish and mackerels.

The Commission is made up of fifteen members; 5 state, 5 private citizen, and 5 legislative such that each state has three commissioners, one from each category. The states pay annual dues to the Commission which makes up the core funding. In addition, the Commission also receives federal funds in the form of Interjurisdictional Fisheries and U.S. Fish and Wildlife Service support (ie. Sportfish Restoration). The Commission enters into exclusively cooperative agreements with the Department of Commerce, NOAA, and the National Marine Fisheries Service which are in agreement with the Commission's focus. Currently, the Commission operates on a one million dollar budget and will be receiving an additional \$750,000 for a cooperative data collection program which will begin this year.

Role and Purpose of the C/R Panel

L. Simpson explained the history of advisory panel input and how the current panel was established. Simpson discussed how the panel would contribute input and advice to the Commissioners. First, the panel

will be asked to participate in management plan development and contribute their knowledge as commercial and recreational representatives on various task forces.

Second, the panel will be asked for ideas regarding certain issues of interest to the Commission as well as to further assist the Commissioners in their decision making. Lastly, the panel will be asked to provide their own issues to the Commission for action, consideration, or as information.

The C/R Panel reports to the State-Federal Fishery Management Committee which is a standing committee of the Commission and reports directly to the Commissioners.

Commission Program Overview

Staff provided summary overviews of all the Commission programs to the members of the panel. Program presentations included SEAMAP, RecFIN/ComFIN, Sportfish Restoration, Interjurisdictional Fisheries, Habitat, and the Cooperative Data Program.

Panel Administrative Format

R. Lukens addressed specific operational issues regarding the panel. The C/R Fisheries Advisory Panel was established by a full vote of the Commission after some program planning at the staff level. The development of the panel has been a long process. Historically, separate commercial and recreational committees existed and fluctuated in their activity and involvement prior to the establishment of this group.

The panel operations were developed by staff. The establishment of one group recognizes that there are diverging opinions on multiple issues and allows each group on the panel to meet and discuss its own particular view on certain issues and then meet in a joint session of the full panel to present perspectives, concerns, and ideas. Meetings will begin with a joint session and break out into individual groups with individual agendas to discuss the issues that the Commission staff has presented. Agenda items do not have to be "cross-sector" concerns. The Commission doesn't expect agreement on all issues, but hopes that this type of forum allows for both groups to provide their advice and input to the Commission.

Chairs and vice-chairs should be elected by each subpanel to ensure that individuals are available to moderate the joint and breakout sessions. The chair of the full panel will rotate between the commercial and the recreational chair. The exact structure is open for the panel to decide. The panel will meet in conjunction with the two annual meetings of the Commission (March and October) to allow the panel to interact with the rest of the Commission family. The actions of the panel or the individual subpanels taken at a meeting will be reported to the State-Federal Fishery Management Committee (S-FFMC) for approval and/or action and, when appropriate, will be forwarded by report to the Commissioners. Both chairs will be asked to present their reports to the S-FFMC directly.

Prior to any meeting the panel should give thought to any agenda items for the panel members to address. Those items should be forwarded to the Chairs or to the Commission office for inclusion on the agenda. Staff will compile any materials which may be needed for an agenda item. Staff will also provide the panel with items and issues which may affect the panel, either directly or indirectly.

The breakout session was suggested for a "getting to know each other" period and a chance to discuss how the subpanels prefer to handle their own sessions. Something that must be considered is how the panels want to handle making recommendations. Would a minority opinion be recognized, how is consensus reached, etc. ?

BREAKOUT SESSIONS

Commercial Fisheries Advisory Subpanel

The Commercial subpanel discussed avoiding issues relating to allocation, predicting that those discussions will always end in a split vote. This is probably not the forum for those types of discussions. An issue that may be feasible is a topic like marine reserves, it's an issue that's being promoted by both sides and contested by both sides. The "us against them" mentality has hurt both groups. Essential fish habitat is common ground for both groups also and would be appropriate for the panel to discuss.

Education is an additional item that should be addressed by the panel and both sides could work together on. The panel can bring in speakers, recommend speakers for other groups, or make presentations of their own regarding issues. The general public really doesn't know what goes on in the fishery world. Misinformation and preconceived notions have led to a lack of knowledge within the sectors. Highly specialized commercial fisherman may no longer understand how other fisheries operate. Regulators and enforcement officers don't know how certain gears work and can be manipulated. Misunderstanding of gear types and the use of new equipment have led to unjustified tickets and prosecution. Meeting in conjunction with the rest of the Commission family would allow the panel to invite the Law Enforcement Committee to sit in on presentations and educate them on the problems that the panel is seeing. Clearly, there are plenty of issues which can be addressed by the full panel.

Organizationally, discussion of term limits for appointments to the panel was determined to be premature. Additional meetings may be necessary should a time sensitive issue arise. The panel should operate on a majority rule. Divided issues should be recognized; a minority opinion has as much value as a unanimous decision. Quorums must be met for a full meeting of the panel. An unbalanced panel may need to be evaluated before a quorum is reached. Five commercial members and two recreational members meets the criteria for a quorum (greater than fifty percent attendance) but may not be valid for the full panel to meet.

P. Horn, Mississippi, offered to accept the chair position, the motion was seconded by G. Faulkner. T. Smith was nominated as vice-chair of the Commercial Fishery Advisory Panel. No further nominations were offered, and T. Smith accepted.

Recreational Fishery Advisory Panel

R. Lukens pointed out that meetings are summarized as minutes to ensure that the overall nature of discussions, debates and decisions are preserved for future reference. The minutes will preserve the intent of the panel not specific comments or opinions.

Issues that could be addressed by the panel may include maintaining TACs, by-catch reduction, red snapper and grouper issues, and habitat loss or mitigation. The Commission can make recommendations to the Council regarding these types of issues upon recommendations from the panel. Reciprocal licensing agreements are a serious issue facing both recreational and commercial interests. Law enforcement issues are also good topics. The effects of the socio-economics associated with closures of fisheries are of great concern to both groups and would be a good joint issue for the panel.

P. Murray was nominated for Chairman, the motion was seconded and unanimously approved. R. Gros agreed to participate as vice-chair. Meetings will be chaired by alternating between commercial and recreational.

RESUME JOINT SESSION

Several items were brought up by both groups as possible agenda items for future meetings. Discussion of red snapper could include the implementation and use of BRDs and the maintenance or manipulation of TACs. Habitat issues could be discussed for the next fifteen years and would be valid at any and all future meetings of the panel. Reciprocal license agreements are of interest to both sides of the panel.

Popular Press

G. Faulkner, commercial representative from Louisiana has shown an interest in writing articles regarding the panel and what it is trying to accomplish. Faulkner has written on several topics both for commercially and recreationally popular magazines. Editors are interested in articles that could begin to bridge the gap between user groups. This may be a step to eliminating the negative press of the "battle" between recreationals and commercials. It was agreed that if the whole group is going to be represented, the whole group would be allowed to review any articles. Faulkner indicated this is the only way to proceed as far as he is concerned.

Other Business

There being no further business, a brief wrap up was presented.

Protocol Overview

The Commercial/Recreational Fishery Advisory Panel will allow for additional meetings outside of the spring and fall meeting when the need arises to handle time-sensitive issues.

A quorum should be met by both groups (at least three from each) within the panel for a meeting of the full panel to take place.

A minority vote may be recognized. Failure of a motion occurs when there is a tied vote. A tie only occurs when the split is along subpanel lines.

Both chairs will be invited to stay following the Commercial/Recreational Fisheries Advisory Panel meeting to report to the State-Federal Fishery Management Committee.

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

**COMMERCIAL/RECREATIONAL FISHERIES ADVISORY PANEL
MINUTES
Wednesday, March 18, 1998
Destin, Florida**

L. Simpson called the meeting to order at 8:30 a.m., with the following panel members in attendance:

Members

Scott Riley, Tallahassee, FL
David Dexter, CCA, Mobile, AL
Pete Barber, Alabama Seafood Association, Bayou La Batre, AL
Bob Fairbank, MS Power, Gulfport, MS
Philip Horn, Clark Seafood, Pascagoula, MS
Randy Gros, Marrero, LA
Greg Faulkner, Milton, LA
Pat Murray, CCA, Houston, TX
Tom Smith, Seafood Wholesalers, Inc., Corpus Christi, TX

Others

Jeff Brown, NMFS, St Petersburg, FL
Cynthia Sarthou, GRN, New Orleans, LA
Bob Jones, Southeastern Fisheries Association, Tallahassee, FL
Stewart Jacks, USFWS, Corpus Christi, TX
Michael Bailey, NMFS, Silver Spring, MD
Vernon Minton, ADCNR, Gulf Shores, AL
John Roussel, LDWF, Baton Rouge, LA
Borden Wallace, Daybrook Fisheries, Empire, LA
Doug Frugé, USFWS, Ocean Springs, MS

Staff

Larry B. Simpson, Executive Director, Ocean Springs, MS
Ron Lukens, Assistant Director, Ocean Springs, MS
David Donaldson, SEAMAP Program Coordinator, Ocean Springs, MS
Steve VanderKooy, IJF Program Coordinator, Ocean Springs, MS

L. Simpson began the introductions of the audience in attendance as well as the Commission staff.

Larry Simpson, Executive Director of the Gulf States Marine Fisheries Commission, started his career as a school teacher and coached football and baseball while working on a Masters Degree from the University of Southern Mississippi. He completed his degree at the University of South Alabama. He came to the Commission in 1978 as Assistant Director under Charlie Lyles and was hired as Director following Mr. Lyles' retirement in 1984.

Ron Lukens, Assistant Director of the Commission, is in charge of the Sportfish Restoration activities at the Commission and works with the Wallop-Bureaux program.

Jeff Brown, NMFS office in St. Petersburg, Florida, is involved with the liaison activities between the Commission and the states for the grants management division. He helps process the cooperative agreements that universities, the states and the Commission are involved with.

Cynthia Sarthou, GRN in New Orleans, LA, is an environmentalist representative who is a faithful attendee at the Commission and is the chair of the Gulf of Mexico Fisheries Management Council's Habitat Subcommittee.

Dave Donaldson, staff, is the SEAMAP (Southeast Area Monitoring and Assessment Program) Coordinator at the Commission.

Bob Jones, Southeastern Fisheries Association, has been involved with marine fisheries for many years serving on the Council and through his organization.

Stewart Jacks, Fish and Wildlife Service in Corpus Christi, Texas, is involved with the reserve and sanctuary program for the US Fish and Wildlife Service.

Steve VanderKooy, the Interjurisdictional Fisheries Program Coordinator for the Commission, handles the mirror image program of the Council dealing with near-shore species rather than off-shore species.

Philip Horn, Mississippi's commercial representative, owns Clark Seafood in Pascagoula and serves currently on the Council. Clark Seafood is a processing company that also owns commercial fishing vessels. Their markets are all over the country, primarily producing red snapper, but also butterfish and other herring species. Clark Seafood is a family business founded by Philip's father and is run by his father, himself and his two brothers. Philip's term with the Gulf Council ends July, 1998.

Tom Smith, Texas' commercial representative, works with Seafood Wholesalers in Corpus Christi, a full service seafood distributor for much of Texas. Tom runs four docks which handle snapper, black drum, and flounder. In addition Seafood Wholesalers custom processes for restaurant and hotels all over Texas and seven other states, and handles the lower Rio Grande valley and parts of Mexico.

Pete Barber, commercial representative from Alabama, is president of the Alabama Seafood Association in Bayou La Batre. Pete is also a shrimp broker, buying from the East Coast and selling to the processors along the Gulf, as well as retail outlets in New Orleans.

Greg Faulkner, commercial representative from Louisiana, owns and runs the Trawl and Repair Service Net Shop. They manufacture customized commercial and aquaculture gear and also manufacture various by-catch reduction gear. Greg also assists the universities in the development and testing of experimental gear.

Randy Gros, the recreational representative from Louisiana, started working in conservation in the seventies with the organization SOS (Save Our Specks) and has been with the CCA ever since its founding. Randy now sits on the Board of Directors of the CCA.

Virginia Herring is the Executive Assistant for the Commission.

Bob Fairbank, Mississippi's recreational representative, is with Southern Company (Mississippi Power), works with Mississippi Wildlife Federation and the Mississippi Nature Conservancy, and sits on the national board of the National Wildlife Federation. Bob's interest is in water resources and water quality, and he currently serves on a wetlands committee in Louisiana. Bob is a lifetime recreational fisherman fishing waters from Mississippi to Louisiana.

Scott Riley, Florida's recreational representative from Tallahassee, has worked with the Florida DEP for two years, and currently works with the Department of Insurance. Scott has attended various fishing and boating expos for the DEP, working with the public. He has worked on issues such as net ban, licensing, and

size limits. In addition, Scott has also been interacting with Florida's fishing industry representatives on various issues.

Pat Murray, Assistant Director of the CCA Texas, has been employed by the CCA for the last year and was a volunteer for the last ten years. Pat grew up in Galveston and was involved in both recreational and commercial fisheries as a fishing guide for several years.

David Dexter, Executive Director of Alabama CCA, has been involved with CCA for several years and is pleased with the growth and organization of the Alabama group. He welcomes anyone to come fish the "red snapper capital of the world".

Additional introductions were made during the meeting: John Roussel, Assistant Secretary of Louisiana Department of Wildlife and Fisheries; Borden Wallace, Daybrook Fisheries (menhaden industry); Doug Frugé, U.S. Fish and Wildlife Service and a partner of the Commission.

Overview of the Commission

L. Simpson offered a few thoughts regarding the value and future of the panel and began an overview of the Gulf States Marine Fisheries Commission and the role it has played in marine fisheries over the last forty-nine years. The Compact (P.L. 81-66) signed in 1949 is legally like a treaty among the five Gulf states to work in unison to manage their shared fishery resources. Three other commissions exist: the Atlantic and Pacific States Marine Fisheries Commission and the Great Lakes Fisheries Commission.

The Commission deals with near-shore species and in 1977 wrote the first management plan for shrimp. The Magnuson Act, 1976, was created by Congress to eliminate the foreign fishing fleets from U.S. federal waters (the Exclusive Economic Zone or EEZ). Subsequently, the Gulf of Mexico Fisheries Management Council has taken over the shrimp plan and all other federal water species like reef fish and mackerels.

The Commission is made up of fifteen members; 5 state, 5 private citizen, and 5 legislative such that each state has three commissioners, one from each category. The states pay annual dues to the Commission which makes up the core funding. In addition, the Commission also receives federal funds in the form of Interjurisdictional Fisheries and U.S. Fish and Wildlife Service support (ie. Sportfish Restoration). The Commission enters into exclusively cooperative agreements with the Department of Commerce, NOAA, and the National Marine Fisheries Service which are in agreement with the Commission's focus. Currently, the Commission operates on a one million dollar budget and will be receiving an additional \$750,000 for a cooperative data collection program which will begin this year.

Role and Purpose of the C/R Panel

L. Simpson explained the history of advisory panel input and how the current panel was established. Simpson discussed how the panel would contribute input and advice to the Commissioners. First, the panel will be asked to participate in management plan development and contribute their knowledge as commercial and recreational representatives on various task forces.

Second, the panel will be asked for ideas regarding certain issues of interest to the Commission as well as to further assist the Commissioners in their decision making. Lastly, the panel will be asked to provide their own issues to the Commission for action, consideration, or as information.

The C/R Panel reports to the State-Federal Fishery Management Committee which is a standing committee of the Commission and reports directly to the Commissioners.

Commission Program Overview

Staff provided summary overviews of all the Commission programs to the members of the panel. Program presentations included SEAMAP, RecFIN/ComFIN, Sportfish Restoration, Interjurisdictional Fisheries, Habitat, and the Cooperative Data Program.

Panel Administrative Format

R. Lukens addressed specific operational issues regarding the panel. The C/R Fisheries Advisory Panel was established by a full vote of the Commission after some program planning at the staff level. The development of the panel has been a long process. Historically, separate commercial and recreational committees existed and fluctuated in their activity and involvement prior to the establishment of this group.

The panel operations were developed by staff. The establishment of one group recognizes that there are diverging opinions on multiple issues and allows each group on the panel to meet and discuss its own particular view on certain issues and then meet in a joint session of the full panel to present perspectives, concerns, and ideas. Meetings will begin with a joint session and break out into individual groups with individual agendas to discuss the issues that the Commission staff has presented. Agenda items do not have to be "cross-sector" concerns. The Commission doesn't expect agreement on all issues, but hopes that this type of forum allows for both groups to provide their advice and input to the Commission.

Chairs and vice-chairs should be elected by each subpanel to ensure that individuals are available to moderate the joint and breakout sessions. The chair of the full panel will rotate between the commercial and the recreational chair. The exact structure is open for the panel to decide. The panel will meet in conjunction with the two annual meetings of the Commission (March and October) to allow the panel to interact with the rest of the Commission family. The actions of the panel or the individual subpanels taken at a meeting will be reported to the State-Federal Fishery Management Committee (S-FFMC) for approval and/or action and, when appropriate, will be forwarded by report to the Commissioners. Both chairs will be asked to present their reports to the S-FFMC directly.

Prior to any meeting the panel should give thought to any agenda items for the panel members to address. Those items should be forwarded to the Chairs or to the Commission office for inclusion on the agenda. Staff will compile any materials which may be needed for an agenda item. Staff will also provide the panel with items and issues which may affect the panel, either directly or indirectly.

The breakout session was suggested for a "getting to know each other" period and a chance to discuss how the subpanels prefer to handle their own sessions. Something that must be considered is how the panels want to handle making recommendations. Would a minority opinion be recognized, how is consensus reached, etc. ?

BREAKOUT SESSIONS

Commercial Fisheries Advisory Subpanel

The Commercial subpanel discussed avoiding issues relating to allocation, predicting that those discussions will always end in a split vote. This is probably not the forum for those types of discussions. An issue that may be feasible is a topic like marine reserves, it's an issue that's being promoted by both sides and contested by both sides. The "us against them" mentality has hurt both groups. Essential fish habitat is common ground for both groups also and would be appropriate for the panel to discuss.

Education is an additional item that should be addressed by the panel and both sides could work together on. The panel can bring in speakers, recommend speakers for other groups, or make presentations of their own regarding issues. The general public really doesn't know what goes on in the fishery world. Misinformation and preconceived notions have led to a lack of knowledge within the sectors. Highly specialized commercial fisherman may no longer understand how other fisheries operate. Regulators and enforcement officers don't know how certain gears work and can be manipulated. Misunderstanding of gear types and the use of new equipment have led to unjustified tickets and prosecution. Meeting in conjunction with the rest of the Commission family would allow the panel to invite the Law Enforcement Committee to sit in on presentations and educate them on the problems that the panel is seeing. Clearly, there are plenty of issues which can be addressed by the full panel.

Organizationally, discussion of term limits for appointments to the panel was determined to be premature. Additional meetings may be necessary should a time sensitive issue arise. The panel should operate on a majority rule. Divided issues should be recognized; a minority opinion has as much value as a unanimous decision. Quorums must be met for a full meeting of the panel. An unbalanced panel may need to be evaluated before a quorum is reached. Five commercial members and two recreational members meets the criteria for a quorum (greater than fifty percent attendance) but may not be valid for the full panel to meet.

P. Horn, Mississippi, offered to accept the chair position, the motion was seconded by G. Faulkner. T. Smith was nominated as vice-chair of the Commercial Fishery Advisory Panel. No further nominations were offered, and T. Smith accepted.

Recreational Fishery Advisory Panel

R. Lukens pointed out that meetings are summarized as minutes to ensure that the overall nature of discussions, debates and decisions are preserved for future reference. The minutes will preserve the intent of the panel not specific comments or opinions.

Issues that could be addressed by the panel may include maintaining TACs, by-catch reduction, red snapper and grouper issues, and habitat loss or mitigation. The Commission can make recommendations to the Council regarding these types of issues upon recommendations from the panel. Reciprocal licensing agreements are a serious issue facing both recreational and commercial interests. Law enforcement issues are also good topics. The effects of the socio-economics associated with closures of fisheries are of great concern to both groups and would be a good joint issue for the panel.

P. Murray was nominated for Chairman, the motion was seconded and unanimously approved. R. Gros agreed to participate as vice-chair. Meetings will be chaired by alternating between commercial and recreational.

RESUME JOINT SESSION

Several items were brought up by both groups as possible agenda items for future meetings. Discussion of red snapper could include the implementation and use of BRDs and the maintenance or manipulation of TACs. Habitat issues could be discussed for the next fifteen years and would be valid at any and all future meetings of the panel. Reciprocal license agreements are of interest to both sides of the panel.

Popular Press

G. Faulkner, commercial representative from Louisiana has shown an interest in writing articles regarding the panel and what it is trying to accomplish. Faulkner has written on several topics both for commercially and recreationally popular magazines. Editors are interested in articles that could begin to bridge the gap between user groups. This may be a step to eliminating the negative press of the "battle" between recreationals and commercials. It was agreed that if the whole group is going to be represented, the whole group would be allowed to review any articles. Faulkner indicated this is the only way to proceed as far as he is concerned.

Other Business

There being no further business, a brief wrap up was presented.

Protocol Overview

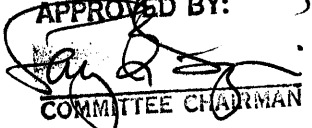
The Commercial/Recreational Fishery Advisory Panel will allow for additional meetings outside of the spring and fall meeting when the need arises to handle time-sensitive issues.

A quorum should be met by both groups (at least three from each) within the panel for a meeting of the full panel to take place.

A minority vote may be recognized. Failure of a motion occurs when there is a tied vote. A tie only occurs when the split is along subpanel lines.

Both chairs will be invited to stay following the Commercial/Recreational Fisheries Advisory Panel meeting to report to the State-Federal Fishery Management Committee.

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

APPROVED BY:

COMMITTEE CHAIRMAN

**STATE-FEDERAL FISHERIES MANAGEMENT COMMITTEE
MINUTES
Thursday, March 19, 1998
Destin, Florida**

Chairman Larry Simpson called the meeting to order at 8:35 a.m. The following members and others were present:

Members

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

Staff

Ron Lukens, Assistant Director, Ocean Springs, MS
Dave Donaldson, SEAMAP Program Coordinator, Ocean Springs, MS
Madeleine Travis, Staff Assistant, Ocean Springs, MS
Steve VanderKooy, IJF Program Coordinator, Ocean Springs, MS
Cindy Yocom, Staff Assistant, Ocean Springs, MS
Jeff Rester, Habitat Program Coordinator, Ocean Springs, MS

Others

Tom McIlwain, NMFS, Pascagoula, MS
Terry Cody, TPWD, Rockport, TX
Doug Frugé, USFWS, Ocean Springs, MS
Tom VanDevender, MDMR, Biloxi, MS
Gary Reinitz, USFWS, Washington, DC
Michael Bailey, NMFS, Silver Spring, MD
Cynthia Sarthou, GRN, New Orleans, LA

Adoption of Agenda

The agenda was adopted as presented.

Approval of Minutes

The minutes of the meeting held on October 16, 1997 in Gulf Shores, Alabama, were approved as presented.

Menhaden Advisory Committee Report

L. Simpson reported on the merger of Zapata Protein (USA) and Gulf Protein, now Omega Protein, Inc. Omega Protein and Daybrook Fisheries are the two remaining reduction companies in the Gulf. The number of reduction plants have also been reduced. The 1997 menhaden fishing season produced landings 24% higher than predicted. Final landings of Gulf menhaden for reduction totaled 611,217 metric tons, a

28% increase over 1996. This figure represents a 15% increase over the last 5 year average. The weather this season was favorable, with the exception of Hurricane Danny in July and windy conditions in June and September. Landings for 1998 are forecast to be about the same or slightly greater than 1997 with 5 reduction plants and 51 vessels in operation. 609,000 metric tons are predicted to be landed in 1998.

There was discussion on marine mammals concerning protected species categorization. The menhaden fishery in the Gulf is in Category 3, which is the least restrictive of the three categories. Category 3 requires reporting any incident with a marine mammal. There was also discussion on the issues of confidentiality and shark bycatch. Committee members were asked to review a paper by Dr. Richard Condrey on the subject of shark bycatch.

Simpson reported that the menhaden port sampling program is being conducted successfully by university and state employees through contract with the Gulf States Marine Fisheries Commission (GSMFC). A stock assessment is being conducted by D. Vaughn of National Marine Fisheries Service (NMFS) Beaufort Lab, and shows a continuing, healthy resource, and a growing biomass. The results of this stock assessment should be available at the fall meeting. The five year revision of the Menhaden Fishery Management Plan will begin in the spring of 1999.

Dr. Pat Tester of NMFS Beaufort Lab presented an interesting report, "Demystifying *Pfiesteria*", and noted that the abundance of bad press attributed to *Pfiesteria* is not entirely warranted. J. Smith of NMFS Beaufort Lab attended a conference on hypoxia in Baton Rouge, LA. There was discussion on Dr. Richard Condrey's report on shark bycatch and Dr. Condrey will be invited to present his findings at the fall meeting.

IJF Program Report

Status of IJF Fishery Management Plans - S. VanderKooy reported on FMP activities. The blue crab FMP revision is making significant progress. The stock assessment is in the final stages of completion and the sociology section is being completed with the assistance of Impact Assessments, Inc. of California. A mail and phone survey of crab harvesters is being developed. Final editing of the revision is scheduled for May of this year and will be presented at the fall GSMFC meeting.

VanderKooy reported that the spotted seatrout FMP should be completed for presentation at the fall meeting. Most sections of this FMP have been drafted with the sociology section nearing completion. The stock assessment for spotted seatrout is almost complete. This section will be a state-by-state stock assessment due to the existence of local populations of spotted seatrout which make a Gulf-wide assessment impossible.

VanderKooy reported that a meeting for final edits on the flounder FMP will be held in June. The current draft of the flounder FMP is 90% complete. The stock assessment section will incorporate Texas, Louisiana, and Florida flounder data and will compare flounder from the eastern and western Gulf.

Otolith Handbook - VanderKooy reported that the Stock Assessment Team is currently drafting an Otolith Handbook. This will be a guide for removal, processing, sectioning, mounting, and reading of otoliths in an effort to standardize methodologies. The handbook will be in loose-leaf form which can be updated with new species and new techniques as they are developed.

Stock Assessment Training Workshop - The University of Southern Mississippi is interested in developing a course in Stock Assessment which could be taught in conjunction with the summer program at the Gulf Coast Research Laboratory (GCRL). Several alternate suggestions were made by committee members on the subject of Stock Assessment training. **J. Roussel moved to have the Stock Assessment Team provide a list of needs that the state agencies have for support of stock assessment efforts in their**

states. This list would then be circulated to colleges and universities in the Gulf area to determine if these needs are being met. The motion was seconded and passed unanimously.

R. Lukens explained that the Stock Assessment Team has also been working with the RecFIN(SE) and ComFIN Committees to assist in coordinating state data collection efforts. Lukens also noted that the striped bass FMP is 12 years old, and was completed prior to IJF involvement. D. Frugé noted that new information on striped bass will be available after the year 2000, and **V.Minton moved to revise the striped bass FMP after the year 2000. The motion was seconded and passed unanimously.** Further discussion ensued regarding fishery management plans, and **C.Perret moved to revise the menhaden FMP. The motion was seconded and passed unanimously.** J. Roussel requested that a summary on the status of each FMP be provided to committee members. S. VanderKooy noted that the Oyster FMP is nearing the 5 year mark for revision. VanderKooy noted that a computerized literature repository is being developed at GSMFC. As FMP's are developed, copies of all reference material are assembled and with the repository, these references will be available on a CD Rom based library. D. Donaldson noted that this library will also be available on the GSMFC website in the future.

RecFIN/ComFIN Report

D. Donaldson gave an overview of the RecFIN(SE) and ComFIN. The Fishery Information Network (FIN), consisting of the RecFIN(SE) and the ComFIN, is the coordination and administration of state-federal programs for the collection and management of fishery dependent data. These programs, RecFIN(SE) for recreational fisheries, and ComFIN for commercial fisheries, came about to address the problems of duplication of effort, lack of coordination, insufficient samples, etc. There are four major goals: to plan, manage, and evaluate a marine commercial and recreational data collection program; to implement that program; to establish and maintain a data management system for the program; and to support the development and operation of a national plan.

The RecFIN(SE) and ComFIN committees recently met in Orlando, Florida. The ComFIN committee is planning periodic meetings of port samplers to enable them to discuss common issues and problems. There continues to be further development of the ComFIN data collection system, consisting of the trip ticket program, discards, etc., and the annual Operations Plan. The RecFIN(SE) committee is developing tasks for addressing night fishing issues, private access issues, non hook and line fisheries, and tournaments.

Donaldson reported that the Marine Recreational Fishery Statistics Survey (MRFSS) wave meeting was held and representatives from the RecFIN(SE) committee attended. The Charter Boat Pilot Survey in the Gulf of Mexico is being conducted with Louisiana, Mississippi, Alabama, and Florida participating in this survey. Three methodologies for estimating effort are being compared: the current MRFSS telephone survey, the captain's telephone survey, and a logbook survey. This program began in September of 1997 and will conclude in August, 1998. Part of the program involves giving the charter boat captains feedback and this is being accomplished with a brochure and a newsletter.

Donaldson explained that full implementation of the program involves state personnel collecting the data. A total of \$750,000 has been appropriated and will be used for hardware, software, personnel, etc. to begin conducting the MRFSS in 1999. Donaldson noted that there are similar programs on the Atlantic and Pacific coasts and the long range goal is to have a national data collection program. The RecFIN(SE) is working closely with these groups to insure compatibility and comparability.

J. Roussel requested a timeline or calendar for dates, milestones, etc. for planning purposes associated with the RecFIN program. This will be addressed at the Commission Business Session.

Habitat Program Report

J. Rester reported on the status of the Gulf of Mexico Fishery Management Council (GMFMC) Essential Fish Habitat (EFH) amendments. In December 1997 the Technical Review Panel met and reviewed the first draft of the EFH Amendments. The Technical Review Panel consists of representatives from the state agencies of the five Gulf states, in addition to D. Frugé, A. Mager, and F. Fisher. The writers are J. Rester, B. Lindall, B. Jackson, and H. Kumpf. The GSMFC Habitat Subcommittee will also review the document. There will be a meeting in early April of the Technical Review Panel to further review and revise the amendments, taking into consideration comments and suggestions from the Habitat Subcommittee. All comments and revisions will be presented at the May meeting of the GMFMC. After the May meeting the EFH amendments will be released to the public. The GMFMC will hold approximately ten public hearings throughout the Gulf states during the summer of 1998. The GMFMC Habitat Protection Advisory Panel will review the document in August 1998, then the document will be given to the National Marine Fisheries Service before October 11, 1998.

Rester explained that a meeting was held in January in Charleston, South Carolina which was attended by members of all Fishery Management Councils. Each Council will have an EFH amendment process, which is dependent on the number of fishery management plans that come under their jurisdiction.

Public Use of Sportfish Restoration Funds for Outreach

G. Reinitz of the U.S. Fish and Wildlife Service (USFWS) briefly reviewed the Sportfish Restoration Act with the current amendments, budgets, etc. Reinitz discussed the House of Representatives Tanner Bill (HR2973) and possible results if it is passed. Reinitz reported that due to a one time adjustment in calculating apportionments, the states will receive noticeably less in 1999, but the amount of funds to the states will increase in 2000. Reinitz explained the connection between the Sportfish Restoration Act/Wallop Breaux/Interval Surface Transportation Enhancement Act (ISTEA).

Reinitz reported on the National Plan for Outreach and Communication, state allocations, and the issue of boating access. The Outreach and Communication program is intended to benefit both state and private entities to help pay for the development of outreach programs through competitive grants. The U.S. Coast Guard boating safety program, pumpout, boating infrastructure, and marinas were also discussed. Reinitz encouraged the state agencies to develop plans for outreach programs.

Reinitz also reviewed the recommendations made by the USFWS to the Tanner Bill and the importance of a consensus statement with the USFWS and the American League of Anglers and Boaters (ALAB). The USFWS has requested in the Clean Vessel Act for pumpouts, that coastal states and inland states be regarded as equals. This will also enable coastal states to submit inland projects.

Committee members expressed concern that the fundamental philosophy of a federal-state partnership is being compromised by having private entities involved in public outreach through the Sportfish Restoration Program. The issue of marine/freshwater division of funds was discussed and Reinitz suggested contacting Sylvia Cabrerra to give a presentation on that subject at a future GSMFC meeting.

Sport Fish Restoration Report

R. Lukens reported on the National Artificial Reef Plan and noted that the Technical Coordinating Committee had reviewed this Plan and sent it to the State-Federal Fisheries Management Committee (S-FFMC) with no recommendation. Lukens explained that the National Fishing Enhancement Act of 1985 established artificial reef development as a priority, designated the U.S. Army Corps of Engineers as the permitting authority, and mandated the development of a national artificial reef plan by the NMFS.

Lukens noted that implementation of the Plan has been carried out by state programs and by volunteer organizations. The revision of the National Artificial Reef Plan was called for in the original legislation. He added that regional planning through the interstate commissions and the use of artificial reefs as fishery management tools has further supported a revision.

The National Marine Fisheries Service gave their approval for revision of the Plan through the commissions and the member states, and this revision is being done under the auspices of the NMFS. Lukens reviewed the Plan covering location, materials, stewardship, liability, and mitigation. Lukens reported that the TCC Artificial Reef Subcommittee is submitting the revised National Artificial Reef Plan to this Committee for approval to send to the NMFS, in conjunction with the Atlantic States Marine Fisheries Commission (ASMFC), along with a recommendation that it take the place of the 1985 National Artificial Reef Plan. If approved by this Committee, the Plan would then go on to the full Commission for their consideration.

There was lengthy discussion by committee members concerning certain language in the document. **E. Conklin moved that the revised National Artificial Reef Plan be approved with specific changes in language. (Attachment 1) The motion was seconded and passed unanimously.**

Commercial/Recreational Fishery Advisory Panel Report

L. Simpson reported that the Commercial/Recreational Fishery Advisory Panel will bring their recommendations to the S-FFMC before going to the full Commission. There was full attendance of appointed members of the Advisory Panel. A commercial representative from Florida is to be named.

Simpson reported that the Advisory Panel discussed limits of their terms, meeting time frame, future agenda issues, proxies, quorums, and methods of reporting. Each GSMFC Project Coordinator gave a short presentation describing their programs to the Advisory Panel.

The Commercial/Recreational Fishery Advisory Panel will have a Commercial Chair and a Recreational Chair. Commercial Chair is Philip Horn and Vice-Chair is Tom Smith. Recreational Chair is Pat Murray and Vice-Chair is Randy Gros.

Finalization of State Directors' Summer Meeting

The summer State Directors' Meeting will be held in Louisiana in June. Firm dates and place will be decided via conference call.

Status of Gulf Disaster Funds

J. Brown of NMFS in St. Petersburg, Florida, reported that at this time the release of disaster funds appropriated for the red tide in the Gulf of Mexico and the Bonnet Carré Spillway are under review at NMFS headquarters.

Committee members suggested that the GSMFC write to NMFS headquarters, explaining that this process began in October 1997 and to date, no funds have been released, and that state agencies are under time restraints to utilize these funds.

There being no further business, the meeting adjourned at 12:10 p.m.

DETAILS OF GSMFC CHANGES TO THE DRAFT NATIONAL ARTIFICIAL REEF PLAN

Page 4, second line from the top. Change *must* to *should*. The sentence reads “Planning, long term monitoring, and evaluation measured against project goals and objectives should be incorporated ...”

Page 4, second line from the bottom of the page. Change *must* to *should*. The sentence reads “As a fisheries management tool, objectives of the artificial reef project should match ...”

Page 14, third line in first full paragraph. Change *must* to *should*. The sentence reads “Because of the potential long term effects of altering the environment through artificial reef development, and the potential impacts of artificial reefs on finfish and shellfish stocks, eligibility to hold a permit to develop an artificial reef should be restricted to the ...”

Page 14, sixth line in first full paragraph. Change *only* to *principal*. The sentence reads “The states’ natural resource agencies are the principal entities which can...”

Page 14, ninth line in first full paragraph. Change *must* to *should*. The sentence reads “If the state wishes to extend its permit authority to other entities, it should do so in writing...”

Page 14, tenth line in first full paragraph. Change *remains* to *should be*. The sentence reads “However, the state agency should be the ultimate authority ...”

Page 14, second line in second paragraph. Change *must* to *should*. The sentence reads “Further, such plans should be designed...”

Page 17, five lines from the top. Change *must* to *should*. The sentence reads “These efforts should be conducted ...”

Page 17, second line from the bottom. Change *must* to *should*. The sentence reads “Although these groups have traditionally played an important role in development of artificial reefs in many states, they should coordinate their activities ...”

Page 39, four lines from the top. Insert *light* between the comma and the word vehicle. The sentence reads “Among those that have been found to be persistently problematic are: wood, fiberglass, plastic, light vehicle bodies, fiberglass boats and boat molds, ...”

Page 39, six lines from the top. Insert the following language so that the sentence reads “ These materials should not be used in artificial reef development, *unless specific design features can be employed to provide durability and stability. For instance, plastics and fiberglass are durable and can be designed with sufficient density to ensure stability.*”

Page 45, first line in third full paragraph. Change *must* to *should*. The sentence reads “Eligibility to hold an artificial reef permit should be restricted to ...”

Page 45, second line in third full paragraph. Change *only* to *principal*. The sentence reads “These agencies are the principal entities which are ...”

Page 45, last line on page. Change *must* to *should*. The sentence reads “Restriction of artificial reef permits to state fishery management agencies should be ...”

Page 51, third line from the bottom. Change *must* to *should*. The sentence reads “Private reef construction, if allowed, should be conducted under the auspices...”

Page 58, fifth line from the top. Insert the following language so that the sentence reads “*It is recommended that* routine collection of data such as ...”

Page 58, seventh line from the top. Delete *must*.

**COMMISSION BUSINESS MEETING
MINUTES
Thursday, March 19, 1998
Destin, Florida**

Chairman Buster Brown called the meeting to order at 1:08 p.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

Ed Conklin, FDEP, Tallahassee, FL
Vernon Minton, ADCNR/MRD, Gulf Shores, AL (*proxy for James Martin*)
Mike Ray, TPWD, Austin, TX (*proxy for Andrew Sansom*)
L. Don Perkins, GSMFC, Houston, TX
J. E. "Buster" Brown, Texas Senate, Lake Jackson, TX
Corky Perret, MDMF, Biloxi, MS (*proxy for Glade Woods*)
George Sekul, Gulf Central Seafoods, Inc., Biloxi, MS
John Roussel, LDWF, Baton Rouge, LA (*proxy for James Jenkins*)

Staff

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

Others

Jeffrey Brown, NMFS, St. Petersburg, FL
Doug Frugé, USFWS, Ocean Springs, MS
Columbus Brown, USFWS, Atlanta, GA
Tom McIlwain, NMFS, Pascagoula, MS
Cynthia Sarthou, Gulf Restoration Network, New Orleans, LA
Jerry Waller, ADCNR, Dauphin Island, AL

Adoption of Agenda

The agenda was adopted as presented.

Approval of Minutes

D. Perkins moved to approve the minutes of the October 16, 1997 meeting as presented. V. Minton seconded. The motion was passed.

Law Enforcement Committee (LEC)

Jerry Waller, Chairman for the LEC reported that the LEC met Wednesday, March 19, 1998. He reported that the Coast Guard's new representative on the LEC was Lieutenant John Sherlock. He reported on the activities of the Eighth Coast Guard district.

Ms. Miriam Stuckey, U.S. Food and Drug Administration reported to the LEC on the Patrol Evaluation Pilot Program. The report was detailed and Ms. Stuckey answered questions and listened to comments from the LEC. **On behalf of the LEC, J. Waller requested that GSMFC staff write a letter to Ms. Stuckey's superior(s) conveying the LEC's appreciation of her efforts and cooperation she has extended in relation to this pilot program. They would also like to express their desire to have Ms. Stuckey continue working with them with this project.**

J. Waller presented a video to the Commissioners that was developed by the Interstate Shellfish Sanitation Conference. The video, entitled "A Call to Action - Illegal Shellfish Harvesting, Legal Intervention" will be used as an educational tool for state judiciaries and legislators to bring attention to the impact of illegal shellfish harvesting on the public. After viewing the video, the Commissioners were asked to complete a presentation evaluation.

Without objection, B. Brown approved J. Waller's report including the request to send a letter to Ms. Stuckey's superior(s).

Technical Coordinating Committee (TCC) Report

C. Perret reported that the TCC met on Wednesday, March 18, 1998. The TCC received reports from the Anadromous Fish Subcommittee, Crab Subcommittee, SEAMAP Subcommittee, and Data Management Subcommittee. The Anadromous Fish Subcommittee continues to work with striped bass restoration projects. They requested and received permission from the TCC to revise, no earlier than 2000, the Striped Bass FMP.

The Crab Subcommittee reported on a cooperative effort by the Commission and the Gulf Council regarding a profile on the *Geryonid* species. Harriet Perry was approved as the Commission's representative. The Subcommittee is planning a blue crab mortality symposium that will be held in May 1999. When details are finalized they will report to the Commissioners in the Fall. Traci Floyd is a new representative on the Crab Subcommittee and the Technical Task Force for Mississippi. The Task Force reported that all sections of the Blue Crab FMP are now in draft form, except the sociology and economic sections.

The SEAMAP Subcommittee reported that the spring plankton survey is approaching and they are preparing for the summer shrimp/groundfish survey. The Subcommittee discussed the Texas Shrimp Association objections to the real time data being produced by these surveys but saw no need to take action. The SEAMAP 1996 Atlas will be published in 1998. A SEAMAP meeting will be held in April to discuss the calibration of gear used in the surveys. Another meeting will address techniques for processing environmental data.

The Data Management Subcommittee (DMS) received reports on a new device to input data into computers. Texas is testing the device in their creel surveys and will report back to the other states regarding its potential. Other topics discussed were data collection for night fishing and fishing tournaments, as well as the pilot charter boat survey.

State-Federal Fisheries Management Committee (S-FFMC) Report

L. Simpson stated that the S-FFMC met just previously to this session. He briefed the Commissioners on the Menhaden Advisory Committee (MAC) report, stating that the 1997 final landings

of Gulf menhaden for reduction totaled 611,217 mt, a 28% increase from the 1996 landings. This represents the efforts of five plants and 51 vessels. Topics discussed included the Marine Mammal Protected Species categorization of the menhaden fishery, and the draft update to the Gulf menhaden stock assessment. The Committee received a report from Dr. Pat Tester, NMFS, Beaufort, NC regarding the myths and inaccurate reports in the media about *Pfiesteria*. Due to the media interest in sharks as by-catch in the purse-seine fishery and a report suggesting an impact to the summer nursery grounds by the menhaden industry, the MAC was requested to review a paper submitted by Richard Condrey as part of Janaka DeSilva's dissertation work. Changes are already being implemented in 1998 by the menhaden fleet to further reduce the mortality associated with by-catch. Commissioner Fred Miller requested that this issue would be better addressed by the Commission if we invited R. Condrey and J. DeSilva to the Fall session of the Commission meeting. **J. Roussel motioned to invite these gentlemen to discuss their findings and possible solutions, and that they speak to the MAC and the Commission Business Session. V. Minton seconded. The motion passed.** V. Minton asked if it would be necessary to pay the travel expenses for these gentlemen. L. Simpson stated that if it were necessary it could be done.

Other topics addressed in the S-FFMC included the status of IJF FMPs. Significant progress has been made on the Blue Crab FMP revision. The sociology section is still in need of development. Final editing is scheduled for May 1998, and it is anticipated that the FMP will be presented at the Fall meeting. The spotted seatrout TTF and IJF staff hope to finalize the Spotted Seatrout FMP for presentation at the Fall meeting also. The stock assessment for the Spotted Seatrout FMP is in the final stages of completion. Progress on the Flounder FMP is 90% complete. The Texas stock assessment for flounder is expected to be complete by the end of April.

L. Simpson stated that the S-FFMC received a report on the new Commercial/Recreational Fishery Advisory Panel that met for the first time on Wednesday, March 18. All members have been appointed except for a commercial representative from Florida. The first meeting was an orientation of the Commission and the Commission programs. The general format of how the panels would operate were reviewed and discussed. Also discussed were issues of mutual concern to both panels.

L. Simpson asked S. VanderKooy to review the final survey design for the Blue Crab FMP sociological section. S. VanderKooy reported that Impact Assessments, Inc. of La Jolla, CA has completed the design and is ready for testing. Fishermen will be asked to review and comment on the survey. A cover letter has been prepared and the TTF feels that the response will be better if the letter goes out on the individual state agency's letterhead. A copy of the final letter and survey will be sent to the State Directors for their approval.

L. Simpson reported that R. Lukens gave a presentation on the 1997 amendments to the National Artificial Reef Plan to the TCC. The TCC recommended that the S-FFMC receive the presentation. The S-FFMC recommended that the document be approved with changes from "must" to "should" in the permitting and mandatory monitoring sections, as well as changes in the language on page 39 and page 58. Additional word changes were also recommended. R. Lukens briefed the Commissioners on the update and identified some of the changes involving which types of materials are the best for artificial reefs and who should hold permits for artificial reefs. S-FFMC recommendations for changes were not included in the presentation to the Commissioners. V. Minton requested that R. Lukens provide written details of the recommended changes before the Commission approved the amended document. Prior to the end of the meeting, R. Lukens returned with a revised presentation and highlighted the changes (Attachment 1). **C. Perret motioned to adopt the National Artificial Reef Plan - 1997 Amendments. E. Conklin seconded. The motion passed.**

Other topics discussed included the status of Gulf Disaster Funds resulting from the red tide events in the Gulf of Mexico and the Bonné Carre spillway opening. The U. S. Congress considered the impact of these disasters and provided disaster funds for the Gulf Region in the amount of \$3.5 million. To date, the

government has not released these funds to the states. Attempts at contacting the appropriate officials have not helped speed the process. These funds are intended to help the states deal with the disaster impact but the funds have not been transferred. The Commissioners discussed contacting the appropriate persons to have the funds released. J. Brown stated that the NMFS/SERO had sent a draft declaration to NMFS Headquarters for consideration. The declaration included information gathered from the states. This was done four weeks prior. It is his understanding that it is still under consideration and no action has been taken to date. **C. Perret motioned to direct the Executive Director to send a letter to the appropriate person(s) indicating the states' efforts to receive this disaster assistance to date, and the need to move forward. V. Minton seconded.** C. Perret discussed the background involved in receiving these funds. As early as October 1996, a letter from Acting Governor Musgrove of Mississippi was sent to the President. The Governor of Louisiana wrote in July 1997. To date they have received no response. The states were able to gain the support of Congress and to have \$3.5 million authorized for disaster assistance. As recently as January 1998, the states again provided information to NMFS Headquarters and requested the funds. At present, all states have agreed to match funds when they are made available. C. Perret suggested a stronger letter be sent and state the need for the release of these funds as soon as possible. Congress has been notified of this situation and they are prepared to assist the states in their efforts to receive the disaster funds. J. Roussel noted that the states met with NMFS in September 1997, and were instructed on how to proceed so that they could receive the funds. NMFS indicated that this was a time sensitive situation and suggested they submit their request by October 1, 1997. To date, the states have not even received notice that their request had been received. **The motion was passed to send the letter to the State agencies for review prior to being sent to the NOAA/NMFS Assistant Administrator for Fisheries, the Office of the Gulf States Governors, and the Gulf Congressional Delegation.**

NMFS/Southeast Regional Office (SERO) Report

J. Brown reported on behalf of the NMFS/SERO. He briefly discussed the NMFS/SERO handling of the Gulf Disaster Funds since it had already been discussed in detail. Basically, the SERO sent the information gathered from the states to NMFS Headquarters in mid February. The declaration is now being considered but no action has been taken. He also reported that the Commission is currently negotiating with Dr. Bill Fox regarding information in the Commission's application for the \$750,000 which was Congressionally mandated to the Commission for RecFIN data program enhancement and cooperative program transition. The SERO has already reviewed the application and begun the process to ready the document for NMFS Grants Management Division. After negotiation with Dr. Fox, the SERO will send the package forward as soon as possible.

Another topic of interest in the SERO, is Amendment 9 to the Shrimp FMP. The status as of March 17, 1998 is that NMFS has approved the amendment but the final rule that would implement the amendment is still being reviewed by the Office of Management and Budget. That review should be completed at any time. He also reported that the SERO is currently reviewing the red snapper TAC that was recommended by the Gulf Council.

J. Brown summarized the current TED requirements which include: no soft TEDs; no try-nets greater than 12 feet can operate without a TED; and, bottom shooters with short flaps are required in the EEZ. He also reported on studies for repairing soft TEDs so that they can be re-certified.

USFWS Region 4 Office Report

C. Brown reported on behalf of USFWS Region 4. He reported that Sam Hamilton regrets that he was unable to attend this meeting due to prior commitments. He stated that the FWS was very excited about the agency's changes in organization and the evaluation of the Ecosystem Approach to management. He distributed a recent Directorate Decision that had been distributed to all FWS employees. In an effort to strengthen the Ecosystem Approach and to make it more visible changes in organization will result.

Basically three new assistant regional director positions in each region will be created for the Fisheries, Refuges and Wildlife, and Ecological Services programs. They will be responsible for overseeing regional office technical staff in each of the three programs.

C. Brown reported that the FWS recently completed the report on the 1996 National Survey of Fishing, Hunting and Wildlife - Associated Recreation. It is available in hard copy or over the Internet. He also discussed recent actions regarding sturgeon. Restrictions that will limit the import/export of all sturgeon go in to effect March 31, 1998. The FWS will put together a working paper regarding their approach to pressures on the stock of this endangered species and will report back to the Commission. Impact is being created not only by aquaculture but also by a domestic black market involved in sturgeon caviar.

He reported on sea turtle conservation activities that have been conducted cooperatively with the State of Florida. These activities included beach lighting surveys, beach driving management plans, and a coyote control program which resulted in an 88 percent reduction in coyote predation on sea turtle nests in St. Joseph State Park.

He also discussed the FY 1999 budget for FWS which is \$1.42 billion, the largest budget ever proposed for the agency. Although \$4.4 million represents an increase to fisheries programs, the majority is targeted for initiatives in the Southwest Ecosystem for aquatic nuisance species, aquatic habitat restoration, and fish passage projects.

FY 1998 NMFS Budget

L. Simpson reported that the President's FY 1999 NMFS budget request is approximately \$351 million which represents a 2.6 % increase over 1998. It indicates that the budget includes \$25 million for data acquisition. The budget request also anticipates \$19.78 million in user fees to be collected. A large portion of funds, \$159 million will be used for a NOAA fleet replacement account for the construction of new fisheries research vessels.

He reported on some specific increases and decreases that do not reflect a strong support of data acquisition. Some increases include \$3 million for stock and bycatch assessments; \$1.5 million for economic data collection; and, \$6 million for stock assessment and data collection. Decreases include several East Coast surveys, Alaska surveys, and Hawaiian surveys. The Alaska Fisheries Information Network, a new program similar to RecFIN, represents a \$1.7 million decrease. Also decreased by \$800,000, is recreational fishery harvest monitoring. He also pointed out that S-K assistance which is available to eligible applicants for research and development support will now be available to recreational fisheries, not just commercial fisheries as has been the case in the past.

L. Simpson distributed a copy of a letter to Senator Cochran's office. At the Senator's request the Commission provided information regarding the development and implementation of a long-term data program for recreational and commercial fisheries. The Commission recommended that these programs, RecFIN and ComFIN, be funded at \$3 million and \$4 million respectively, in order to fully implement data collection and management. He suggested that the Commissioners use this letter to assist them when supporting this program within their states and with Congress.

State Director's Reports

Florida - E. Conklin reported on activities in the Florida Department of Environmental Protection (FDEP). He reported that the State Legislature was currently in the third week of a 60 day session. The State is enjoying a budgetary windfall as a result of the Florida tobacco settlement. Several fisheries proposals are being considered including moving aquaculture regulations from the State resource agency to the Department of Agriculture, and several bills to improve enforcement measures. He reported that the FDEP

budget as it relates to marine resource management is similar to last year. They hope to gain support for research studies, assessments and monitoring of red tide and *Pfiesteria*, which will be used in conjunction with federal monies if they ever become available. The Florida Marine Fisheries Commission has proposed several reef fish actions. They intend to sue NMFS regarding lack of implementation of federal requirements in the red snapper fishery. Additional restrictions proposed under state regulations include the reef fish complex and more reductions on grouper. Other actions includes a constitutional amendment that would move saltwater management to a constitutional agency, similar to what happened many years ago with freshwater and wildlife in Florida. A Constitutional Amendment Division is currently addressing these types of issues under Florida's Constitution. This may be considered in November 1998 during the general election.

Conklin reported that a fairly significant fish kill occurred in the St. Lucy River estuaries as a result of a dinoflagellate commonly called "crypto". It shows up after or during major freshwater introductions that are occurring as a result of significant rainfall. It affects mainly silver mullet but it has also killed other fish.

Alabama - V. Minton reported for Alabama Department of Conservation and Natural Resources (ADCNR). He reported on ongoing projects that are being accomplished with disaster funds that were provided after Hurricane Andrew. They continue with shell planting and are attempting to develop an area in open waters in Mobile Bay to reestablish a healthy oyster reef. To protect the reef from shrimp trawl damage, they will use a concrete structure encircling the reef. The Department is also conducting an oyster growth study. He reported that the oyster reef had been closed for several months due to heavy rainfall. He believes the heavy rainfall is also responsible for a reduction in post larval shrimp.

In regards to proposals in the Alabama Legislature, he reported that a bill is being considered that would create stiff penalties for improper placement of reef material in State waters, or outside of a permitted area, or without a permit. A first time offense would be a Class A misdemeanor punishable with a fine of \$5,000 to \$10,000. A second offense would be a Class C felony that would carry a \$10,000 fine and/or 30 days in jail. The artificial reef zone off Alabama was expanded last year. They now have approximately 1,200 square miles of area that may be permitted. He reported that the University of South Alabama (USA) is conducting a 3 year study on different types of concrete modules to provide unbiased information as to their suitability for artificial reef material. The Department is in the process of contracting to have public artificial reefs surveyed.

Minton reported on a study done in 1986 that looked at the larval crabs and juvenile crabs survival and abundance in the Mobile Bay. That study indicated that approximately 100 times more larval crabs existed than they had habitat to support them. Based on that study, they determined that the harvest of females was appropriate. Since then, this has been questioned and the Department has contracted with USA to revisit this situation. Preliminary reports show that larval crabs are still up but that habitat has also increased.

Mississippi - C. Perret reported on activities of the Mississippi Department of Marine Resources (MDMR). He reported that MDMR has moved into their new offices on Bayview Drive.

He stated that the Mississippi Legislature is coming to a close. A bill that would have provided the Department with their own enforcement officers did not pass. Several bills do look like they will be approved. One would provide the MDMR Commission authority to enter into reciprocal fishing license agreements for saltwater angling with Mississippi's neighboring states. Another would provide the Department and the Commission more flexibility on opening oyster reefs.

He reported that the Commission and MDMR recently enacted by resolution a blue crab task force to look at relevant issues and problems in that fishery. In regards to disaster funds received from Hurricane

Andrew he reported that shell planting in September 1997 has resulted in a successful spat set and reefs appears to be healthy. The Department is also mapping all of the oyster reefs in the State of Mississippi with the disaster funds.

He reported that four sport fish records have been broken in the State of Mississippi. Two records were broken for blue marlin; the record was broken for black drum and crevalle jack.

Louisiana - J. Roussel reported for the Louisiana Department of Wildlife and Fisheries (LDWF). He reported that the regular session of the Louisiana Legislature will begin on April 5, and will deal only with fiscal issues. The Governor however has called a special session just prior to the regular session. The special session will consider three fisheries bills. These bills are not controversial or major. One considers the authorization of an automated licensing system, similar to the one being looked at in the State of Texas.

Other items of interest in Louisiana include lifting the moratorium on the issuance of new oyster leases on April 13. In January 1998, the Department initiated the pre-construction phase of the biological monitoring program for the Davis Pond freshwater diversion project. The pre-construction phase is scheduled to be completed in the year 2000, with another four years of post construction. The biological monitoring will take 46 years. It is anticipated that the project will produce benefits that will amount to approximately \$15 million for fish and wildlife and another \$300,000 for recreation.

The Department is in the initial stages of implementing a trip ticket system. They are currently reviewing and modifying forms in cooperation with wholesale dealers. A pilot system will be started in July 1998, and it is hoped that full implementation will begin in January 1999. Some of the disaster funds received from Hurricane Andrews will cover some of the start-up cost of this project.

Other disaster funds are being used to contract with the Louisiana Department of Natural Resources (DNR) to implement an underwater obstruction removal program. This program is an offshoot of the DNR's gear compensation program. The LDWF is also working to implement a log book program that involves hiring shrimpers and charter boat captains to keep a detailed record of how various environmental events affect their operations. Other uses of the disaster funds include setting up a hydrological monitoring platform which will be linked by satellite. These monitoring platforms will provide salinity, temperature, tide height, and wave height information via the Internet on an almost real-time basis.

Texas - M. Ray reported for Texas Parks and Wildlife Department (TPWD). He reported that Gene McCarty was promoted from Director of Coastal Fisheries to Chief of Staff and now works for the Executive Director. Larry McKinney, Senior Director for Aquatic Resources, is Acting Director of Coastal Fisheries. It is anticipated that the Division Director position should be announced soon and hopefully filled by mid-summer.

He stated that the Texas red tide episode, which began the third week of September 1997, subsided in mid-January. Approximately 22 million fish were killed, mostly menhaden.

M. Ray gave an update on the shrimp limited entry plan that was implemented several years ago. It has undergone the third round of buy-backs. To date, TPWD has purchased 124 bay and bait licenses for a grand total of \$437,862. This represents 4% of the original 3,300 bay and bait licenses in existence at the onset.

The Texas stock enhancement program has resulted in 42 million hatchery-raised fingerlings released into Texas bays during 1997. This includes 36.7 million red drum and 5.3 million spotted seatrout. They have successfully spawned Atlantic Croaker and survival rates are good in rearing ponds. They will attempt to spawn sheepshead in the near future.

He reported on proposed regulations that are currently being addressed in public hearings during the month of March. Those of interest to coastal fisheries include issues in the blue crab fishery which involve limited entry, license buy-back, and biodegradable panels. In the bait fish industry the TPWD is proposing to extend an exemption for collection of up to 1,500 Atlantic croaker per day from June - September; and, to allow taking up to 300 dozen per day ribbonfish. In relation to the vermilion snapper fishery, hearings are being held to address a proposal to change the size limits so that they are consistent with federal size limits.

Regulations have been proposed for the aquaculture fishery, particularly as it relates to disease management on shrimp farms for both exotic and native shrimp. These issues are currently being addressed on a volunteer basis and the TPWD wants the authority to handle and enforce disease management in aquaculture endeavors.

M. Ray stated that Texas was very proud to announce that Coastal Fisheries has received \$250,000 for each of the next two years to replace or repair its existing research vessel fleet.

Status of Renaming NMFS Research Vessel ("Relentless") the Gordon Gunter

T. McIlwain reported that the "Relentless" was currently in a shipyard on the East Coast being renovated prior to being transferred to NMFS Pascagoula, MS in June. Hopefully it will be in operation later this summer. When it was learned that the vessel would be transferred to the NOAA fleet here in the Gulf, several people including the Commission put out a request to have the name of the vessel changed to "Fishing Research Vessel, Gordon Gunter", in honor of Dr. Gunter. This request has created some controversy because of NOAA's rules regarding naming a vessel after an individual. As of March 17, a recommendation has gone to Dr. Baker, the head of NOAA with two options. One option was to maintain the name "Relentless", and the other was to rename the vessel "Fishing Research Vessel, Gordon Gunter". No decision has been made to date. The NOAA people are anxious for an answer since the vessel is in the shipyard now and it would be the appropriate time to change the name if approved.

Report on Congressional Funding Initiative for Coordinated Data Collection Program

L. Simpson briefed the Commissioners on the background of the Congressional funding initiative which provided \$750,000 for the GSMFC only, to enhance the current recreational data collection program. These funds are in addition to funding provided under the RecFIN program and will be spent in consultation with the Gulf States. The funds are to complete a transition that will commence a cooperative program with all Gulf States without duplication within NMFS or the Council. The Commission will provide a report back to the Committee on Appropriations by April 1, 1998 on the roles of the respective partners in the cooperative system and the cost of transition to a new system of data collection, analysis and access.

He provided a copy of the Application for Federal Assistance that the Commission submitted to the NMFS/SERO to receive the transition funds. He described the various jobs involved in the application. They include: Job 1, Program Administration; Job 2, Transition Coordination; Job 3, Installation of Computer (hardware and software equipment); Job 4, Hire and Train GSMFC Personnel; Job 5, Hire and Train State Survey Personnel; and, Job 6, State Field Data Collection for the Charter Boat Fishery (this is a no cost job which will be an extension of the current charter boat activities). He also discussed other possible training methods which would include running the last wave of the survey concurrently. He also discussed the GSMFC new positions that would be required to accomplish this program. They are a Data Programmer/Analyst, Computer System Administrator, and Regional Survey Coordinator.

J. Roussel discussed the state's contractual monies identified in the cost breakdown. He stated that he would to have more notice to hire and train, since he has to submit his Department's budget and personnel cost to the legislature for the period starting July 1, 1998. He does not have the personnel in his budget to

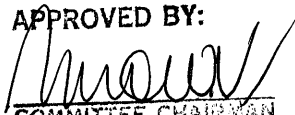
do this project. Without prior approval, he cannot hire people in September. He needs definite information. L. Simpson stated that the Commission could hire personnel for the states.

There was a great deal of discussion regarding the budget figures for the individual states involved in the project. There was concern regarding the method of pro-rating the budget figures and as to whether or not the figures were still applicable based on inflation and program modifications. In some instances, figures were not developed in conjunction with agency personnel charged with fiscal responsibility. There was also concern regarding equitable distribution of the funds. C. Perret suggested that the budget figures be re-addressed following the Commission meeting.

(While not a part of the official record of this meeting, a conference call was subsequently held on March 26 and again on March 31. New state budgets were developed in consultation with the Commission, State Directors and state personnel who will be involved in the project. A new cost breakdown was developed and agreed upon. It was then submitted with the Commission's Application for Federal Assistance.)

L. Simpson presented a final draft of the report to the Committee on Appropriations that is due on April 1, 1998.

The meeting adjourned at 5:22 p.m. and will reconvene at 8:30 a.m., Friday, March 20, 1998.

APPROVED BY:

COMMITTEE CHAIRMAN

**COMMISSION BUSINESS MEETING
MINUTES
Friday, March 20, 1998
Destin, Florida**

Chairman Brown reconvened the meeting at 8:30 a.m.

Report on Commission's Cooperative Data Collection Program

Charter Boat Pilot Study - D. Donaldson reported that on September 1, 1997 the Charter Boat Pilot Survey began in cooperation with the Commission, NMFS, Alabama, Mississippi, Florida, and Louisiana and is scheduled to end in August 1998, but based on recent discussions will continue in December 1998. He briefly discussed the background of the program. There are some problems with the current marine recreational fishery statistics survey methodology for sampling charter boats. The effort estimates are very volatile and not precise. Because of this the NMFS and the Gulf States decided to look at this issue and develop some alternative methods for estimating effort for the for-hire-fishermen. One of the methods was the telephone survey of the actual charter boat captains, instead of random digit dialing of coastal households. Field collection began in September 1997, and Wave 1 was recently completed. A meeting was held March 1 to look at Waves 5 and 6. Although the data is preliminary, the initial estimates show that the telephone survey is actually estimating the number of angler trips much lower than the current MRFSS. In conjunction with the surveys, the states are also doing field intercept surveys, the current MRFSS methodology, for the charter boat study only, and these estimates of catch multiplied by the effort estimates gives us a total estimate of catch and effort. The program is going well, although there were some initial start-up problems which have been taken care of.

Menhaden/Head Boat Port Samplers - D. Donaldson reported that the Commission has been involved with the Menhaden Port Sampler Program for three years. The Commission hires independent contractors to collect samples and other biological information that goes into the data base at the NMFS Beaufort Laboratory, so that they can monitor the menhaden resources. The cost of this project is less than \$50,000. This program is currently being administered through the Commission's RecFIN/ComFIN cooperative agreement.

He reported that the Head Boat Port Sampler Program is very similar the Menhaden program. The Commission hires independent contractors and in some instances subcontracts the work to the states.

Report on RecFIN/ComFIN Activities

D. Donaldson provided background information on the Fisheries Information Network (FIN), which is the coordinated administration of state and federal programs for the collection and management of fisheries data. It is comprised of two programs, Commercial Fisheries Information Network (ComFIN) and the Southeast Recreational Fisheries Information Network (RecFIN)(SE). He reported that they have spring and fall meetings and at the recent spring meeting in February they discussed development of a data collection plan for both commercial and recreational data, to make sure that the resources are being utilized wisely. They also worked on developing the annual operational plans and identifying tasks that will be addressed in the upcoming year. For RecFIN they are looking at issues involving night-time fishing, private access fishing, and non-hook and line fisheries. He stated that in the next 6 months there are 8 committee, subcommittee, or work group meetings scheduled to address a variety of different issues relating to recreational and commercial fisheries.

Report on Joint Habitat Program with Gulf Council

J. Rester provided background on joint cooperative funding agreement between the Gulf Council and the Commission. It was initiated in 1997 to establish a habitat program that deals with both state and federal waters. One of the first tasks was to assist the Council with amending their fishery management plans to include description and identification of essential fish habitat (EFH). This was required by amendments to the Magnuson-Stevens Fishery Conservation and Management Act of October 1996.

He reported that the first draft of the EFH amendments have been completed and was reviewed by the Council's Technical Review Panel. The second draft is scheduled for review on April 1-2, 1998. The Commission's Habitat Subcommittee will review the EFH amendments and provide comments to the Technical Review Panel on March 23-24, 1998.

J. Rester reviewed other responsibilities involved in the Habitat Program. Reviewing projects that affect fish habitat in the Gulf will become a major focus of the Habitat Program in the future along with coordinating activities of the Commission's Habitat Subcommittee.

Selection of "Charles H. Lyles Award" Recipient for Presentation in October 1998

The "Charles H. Lyles Award" is awarded annually by the Commission to an individual, agency, or organization which has contributed to the betterment of the fisheries of the Gulf of Mexico through significant biological, industrial, legislative, enforcement or administrative activities. Chairman Brown opened the floor for nominations.

M. Ray stated that the State of Texas would like to nominate Mr. Tom Heffernan. Mr. Heffernan will be retiring in May 1998 after 40 years of service with TPWD. He has served as a biologist, Program Director, Regional Director, and Director of Field Operations where his influence in the State of Texas has been widespread and lasting. He was instrumental in setting up the resource monitoring in the State of Texas, he has worked with artificial reefs, oysters, blue crab, and red drum. He also was involved in the ecological evaluations of all the Texas bays. In the last few years, he came out of retirement to work with TPWD under contract as the commercial liaison for the State to work with the private sector and with the legislature. He was instrumental in getting the limited entry program established in Texas.

V. Minton seconded the nomination. The nomination was approved unanimously.

Executive Committee Report

G. Sekul reported that the Executive Committee had a early morning breakfast meeting. They reviewed the FY 1997 audit report provided by the CPA firm of Piltz, Williams, LaRosa and Company. The report found no material weaknesses. The CPA firm recommended that Commission staff stamp bills paid before filing and that it reduce its procurement procedures to writing. The Executive Committee approved the report. **V. Minton motioned to approve the 1997 audit report. C. Perret seconded. The report was approved.**

G. Herring reported that the Commission would celebrate its 50th Anniversary meeting in October 1999. A committee has been established that includes V. Minton, C. Nelson, W. Penry, and herself. Site visits will be scheduled this summer and a written report provided in October 1998. C. Perret would like to see the committee look at the coastal area of Mississippi for a possible location.

A current financial statement, as of February 28, 1998 was provided. G. Herring reported no problems and a healthy financial situation.

Future Meetings

G. Herring reported that the Commission Fall meeting will be held October 12-17, 1998 in Texas. Bids were solicited and the Four Point by Sheraton on the Riverwalk in San Antonio was selected. The 1999 Spring meeting will be held March 15-19.

Publication List

L. Simpson stated that the Publication List has been updated and is provided for your information. Contact the office if you need copies of any publications.

The meeting adjourned at 9:20 a.m.

ATTACHMENT 1

DETAILS OF GSMFC CHANGES TO THE DRAFT NATIONAL ARTIFICIAL REEF PLAN
(March 3, 1998 Draft)

Page 4, second line from the top. Change *must* to *should*. The sentence reads "Planning, long term monitoring, and evaluation measured against project goals and objectives should be incorporated ..."

Page 4, second line from the bottom of the page. Change *must* to *should*. The sentence reads "As a fisheries management tool, objectives of the artificial reef project should match ..."

Page 14, third line in first full paragraph. Change *must* to *should*. The sentence reads "Because of the potential long term effects of altering the environment through artificial reef development, and the potential impacts of artificial reefs on finfish and shellfish stocks, eligibility to hold a permit to develop an artificial reef should be restricted to the ..."

Page 14, sixth line in first full paragraph. Change *only* to *principal*. The sentence reads "The states' natural resource agencies are the principal entities which can..."

Page 14, ninth line in first full paragraph. Change *must* to *should*. The sentence reads "If the state wishes to extend its permit authority to other entities, it should do so in writing..."

Page 14, tenth line in first full paragraph. Change *remains* to *should be*. The sentence reads "However, the state agency should be the ultimate authority ..."

Page 14, second line in second paragraph. Change *must* to *should*. The sentence reads "Further, such plans should be designed..."

Page 17, five lines from the top. Change *must* to *should*. The sentence reads "These efforts should be conducted ..."

Page 17, second line from the bottom. Change *must* to *should*. The sentence reads "Although these groups have traditionally played an important role in development of artificial reefs in many states, they should coordinate their activities ..."

Page 39, four lines from the top. Insert *light* between the comma and the word vehicle. The sentence reads "Among those that have been found to be persistently problematic are: wood, fiberglass, plastic, light vehicle bodies, fiberglass boats and boat molds, ..."

Page 39, six lines from the top. Insert the following language so that the sentence reads " These materials should not be used in artificial reef development, *unless specific design features can be employed to provide durability and stability. For instance, plastics and fiberglass are durable and can be designed with sufficient density to ensure stability.*

Page 45, first line in third full paragraph. Change *must* to *should*. The sentence reads "Eligibility to hold an artificial reef permit should be restricted to ..."

Page 45, second line in third full paragraph. Change *only* to *principal*. The sentence reads “These agencies are the principal entities which are ...”

Page 45, last line on page. Change *must* to *should*. The sentence reads “Restriction of artificial reef permits to state fishery management agencies should be ...”

Page 51, third line from the bottom. Change *must* to *should*. The sentence reads “Private reef construction, if allowed, should be conducted under the auspices...”

Page 58, fifth line from the top. Insert the following language so that the sentence reads “*It is recommended that* routine collection of data such as ...”

Page 58, seventh line from the top. Delete *must*.

SEAMAP Environmental Data Work Group
Meeting Summary
April 28-29, 1998

The meeting was called to order at 1:00 p.m. The following personnel were present:

Carmelo Tomas, FMRI, St. Petersburg, FL
Mark Van Hoose, ADMR, Gulf Shores, AL
Rob Ford, NMFS, Pascagoula, MS
Joanne Shultz, NMFS, Pascagoula, MS
Michelle Kasprzak, LDWF, Baton Rouge, LA
Richard Waller, GCRL, Ocean Springs, MS
Terry Cody, TPWD, Rockport, TX
David Donaldson, GSMFC, Ocean Springs, MS

M. Kasprzak stated that the purpose of the meeting is to discuss the issue of storage time for chlorophyll samples, analysis of chlorophyll collection methods and determination of best method to use, and review of the Environmental section of the SEAMAP Operations Manual including the review of gear codes.

The first topic discussed concerned the time lapse between the collection and processing of chlorophyll samples. The NMFS and Louisiana compiling a listing of holding time for the various SEAMAP cruises. C. Tomas stated that chlorophyll samples, stored in a typical freezer, that are not processed within several weeks probably have experienced some degree of degradation. It was noted that the historical data needs to be identified in some way to denote the amount of time that it took to process the samples. It was suggested that an additional field could be added to the data base to designate the amount of time between collection and processing. C. Tomas noted that using low temperature storage (using liquid nitrogen), chlorophyll samples can be safely stored up to one month. R. Ford stated that the problem is with processing of samples and there are no designated personnel to run the samples so the low temperature storage would probably solve the problem since it would still take more than a month to process them due to the personnel shortage. The group discussed how to notify users of the data about the time lapse between collection and processing. After some discussion, the group decided to develop a report that would provide some introductory language about the issue, the amount of degradation that occurs for different time periods and a table which outlines the holding times for the chlorophyll samples for the various SEAMAP cruises. J. Shultz and M. Kasprzak will provide the introductory text, C. Tomas will develop the section regarding holding times and each state will review the table developed by NMFS and provide updates to D. Donaldson by May 26, 1998. This report will be distributed to the group and further discussed prior to the next SEAMAP meeting.

The next topic concerned determination of the best method for collecting chlorophyll data. There are three methods that were discussed: spectrophotometry, benchtop fluorometry, and in vivo fluorometry (CTD). The first two methods are extraction methods and provide a measure of chlorophyll_a. The in vivo fluorometry provides a relative abundance of all chlorophyll in the water. It allows a sampler to determine if an extraction method should be used to determine the level of chlorophyll. After some discussion, the Work Group recommended the SEAMAP adopt the

benchtop fluorometric method for measurement of chlorophyll. It also recommended that if the fluorometric method was unable to be used, the spectrophotometric method, using low temperature storage, should be used. M. Kasprzak will compile information regarding price for the necessary equipment and C. Tomas will develop a justification for SEAMAP to use the fluorometric method. It was suggested that Florida could provide some training to the other states in the use of the fluorometric method.

The last item discussed was an in-depth review of the Environmental section of the SEAMAP Operations Manual as well as environmental gear codes used in the SEAMAP data set. The group began by reviewing the gear codes used in environmental sampling. The revised gear code list is attached and represents the administrative record for this portion of the meeting. It was suggested that each participant provide M. Kasprzak with a description of what environmental gear was used and their associated gear codes. This information is due to M. Kasprzak by May 26, 1998. R. Waller asked how new gear codes were added to the list. It was pointed out that there was no formal process for added new codes. After some discussion, the group decided that there be a standing agenda item on the spring meeting, for the Subcommittee to discuss any additions and/or deletions to the gear codes as well as other codes used by SEAMAP. The group then began reviewing the environmental section of the SEAMAP Operations Manual. The revised environmental section is attached and represents the administrative record for this portion of the meeting. It was also suggested that several examples of how to code various types of environmental collection equipment be included in Appendix 3 of the Biological Sampling section of the manual. And the Work Group requested that they be notified when the environmental data sheets were going to be reprinted. This will ensure that the suggested changes will be incorporated into the new sheets.

Being no further business, the meeting was adjourned at 2:00 p.m.

*T TRAWL,STAR
01 COMBINATION--SS+CC
02 COMBINATION--SS+PR
03 COMBINATION--CC+PR
04 COMBINATION--SS+CC+PR
05 COMBINATION--FM+SS
06 COMBINATION--FM+SS+PR
07 COMBINATION--FM+PR
A ASSORTED
AC BIOSONICS ACOUSTIC SYSTEM
BB TRAWL,BIB
BC BOTTLE CAST
BG BATHYTHERMOGRAPH(CTD,STD)
BL LONGLINE,BOTTOM
BS SEINE,BEACH
BT TRAWL,BEAM
CA **CHLOROPHYLL, EXTRACTION**
CC CAMERA,CLOSED CIRCUIT TELEVISION
CD DREDGE,CLAM
CM CURRENT DOPPLER
CS CONTINUOUS FLOW SYSTEM
CT TRAP,CRAB
DL DEEP LINE
DN PLANKTON,DOUBLE NEUSTON OR NEK
DR SURFACE DRIFTER
DV DIVING
EF TRAWL,FISH,EXPERIMENTAL
ES TRAWL,SHRIMP,EXPERIMENTAL
FD TRAWL,FISH DEFLECTOR
FE TRAWL,FISH EXCLUDER
FL FLUORESCENCE,CONTINUOUS FLOW SYSTEM
FM FATHOMETER
FP FISH PUMP
FT TRAWL,FISH
FX **FLUORESCENCE, IN SITU**
GN GILLNET
GR BOTTOM GRAB OR CORE SAMPLER
HL HANDLINE
HO TRAWL,HIGH OPENING BOTTOM
IT TRAP,ICHTHYOPLANKTON,ILLUMINATED
JP JACKPOLE
KP LONGLINE,KALI POLE
KT TRAWL,WING
LL LONGLINE,SURFACE
LN LIFTNET
LP SEINE,LAMPARA
LR TRAP,LOBSTER,REED
LT NIGHT LIGHT
LW TRAP,LOBSTER,WIRE
MC CAMERA,MOVIE
ML MISCELLANEOUS
MN MICROPEKTON
MO PLANKTON,MOCNESS
MQ MARQUESETTE
MS **TRANSMISSIVITY**
MT TRAWL,MIDWATER

NN	PLANKTON,SINGLE NEUSTON OR NEK
NS	NETSONDE
OB	LONGLINE,OFF-BOTTOM
OD	ODOMETER
OF	OVERFLIGHT
OH	OXYGEN,TITRATION,HACHKIT
OI	OXYGEN,SENSOR,IN SITU
OO	OXYGEN,SENSOR,ON DECK
OR	OYSTER RAKE
OW	OXYGEN,TITRATION,WINKLER
OX	OXYGEN,SENSOR,CTD
OY	OXYGEN,SENSOR,YSI
PN	PLANKTON,GENERAL(BONGO,ETC.)
PR	PROFILER,3.5 KHZ SUB-BOTTOM
PS	SEINE,PURSE
PT	TRAWL,SCALLOP
QD	DREDGE,QUAHOG
RE	SALINITY,REFRACTOMETER
RF	RECORDING FATHOMETER
RG	PLANKTON,RING NET
RL	TAG RELEASE
RN	ROUND NET
RT	ROTENONE
RV	REMOTELY OPERATED VEHICLE(ROV)
SA	SALINITY,AUTOSAL
SB	SALINITY,BECKMAN RS5
SC	CAMERA,STILL
SD	DREDGE,SCALLOP
SE	SECCHI DISK
SF	SALINITY,CONTINUOUS FLOW SYSTE
SH	TRAWL,SHUMAN
SI	SALINITY,SENSOR,IN SITU
SL	SALINITY,BENCHTOP/LABORATORY
SJ	SQUID JIG
SM	TRAWL,STANDARD MONGOOSE
SN	TRAWL,SEPARATOR
SO	SONAR
SS	SONAR,SIDE SCAN
ST	TRAWL,SHRIMP
SX	SALINITY,CTD
TA	TEMPERATURE,CONTINUOUS FLOW SYSTEM
TB	TEMPERATURE,BECKMAN RS5
TC	TEMPERATURE,CTD
TD	DREDGE,TUMBLER
TE	TRAWL,TURTLE EXCLUDER
TF	TEMPERATURE,FLUKE
TG	TROLLING GEAR
TH	TEMPERATURE,THEMOMETER
TI	TEMPERATURE,SENSOR,IN SITU
TM	TEMPERATURE,BUCKET
TN	TRAWL,TRYNET
TO	TEMPERATURE,SENSOR,ON DECK
TR	TRAP,FISH
TS	SEINE,PURSE,TURTLE
TT	TRAWL,TWIN
TU	PLANKTON,TUCKER TRAWL

TV TRAP VIDEO
TY TEMPERATURE, YSI
VC CAMERA, VIDEO
VD VERTICAL DRIFTLINE
WT TRAP, LOBSTER, WOOD
XB EXPENDABLE BATHYTHERMOGRAPH(XBT)

COLLECTION OF ENVIRONMENTAL DATA

TABLE OF CONTENTS

Introduction 1-3

Instructions for Collection of Environmental Data. 1-4

Appendices 1-8

 1. Environmental Form 1-9

 2. Vessel Codes 1-10

 3. Data Source Codes 1-11

 4. Measurement of Transparency with Secchi Disc . . . 1-12

 5. Measurement of Water Color with Forel-Ule 1-13

 6. Precipitation Codes 1-14

 7. Hydrocast Sampling Procedures 1-15

 8. Thermocline Depth 1-18

 9. Collecting Water Samples for Salinity 1-19

 10. Chlorophyll Sampling Procedures 1-20

 11. Procedures for Collecting Dissolved Oxygen
 (D.O.) 1-23

 a) Drawing Samples 1-23

 b) Calibrating the YSI Oxygen Meter 1-24

 c) Measuring Dissolved Oxygen with YSI Meter . . . 1-25

Tables 1-27

 1. Conversions for Meters to Fathoms 1-28

 2. Conversions for Meters to Feet 1-30

 3. Conversions for Feet to Fathoms 1-32

 4. Temperature Conversion Table 1-34

 5. Solubility of Oxygen in Fresh Water 1-35

 6. Refractometer (Conversion-Brix to Salinity) 1-36

7. Dissolved Oxygen Saturation Values in Sea Water . . 1-37

INTRODUCTION

This document describes standard operational procedures for collecting environmental data at sea and establishes **primary measurements** minimum requirements for all SEAMAP cruises. Those measurements **are:** considered in the minimum requirements are: temperature, salinity, dissolved oxygen, chlorophyll, Secchi depth and Forel-Ule color. Sampling depths include the surface, mid-water and bottom (or 200 meters at depths greater than 200 meters). Samples are to be taken in conjunction with each biological station.

Please remember these are minimum **measurements requirements** and additional measurements, sample depths and more frequent sampling may be required depending on the type of SEAMAP survey.

The SEAMAP is striving to acquire the most accurate data possible, the preferred sampling device for temperature, salinity, dissolved oxygen, fluorescence, transmissivity, and **determination** of sampling depth is the CTD or STD. The preferred sampling method for chlorophyll is extraction. Water samples can be water collection using Niskin bottles. Dissolved oxygen is measured **with in situ** from D.O sensors attached to the CTD or aboard the vessel with D.O. meters (laboratory probe) or by a titration modified Winkler method. Secchi depth is measured with a standard white, 16 cm or 30 cm diameter Secchi disc. Water color measurements can be made by use of the Forel-Ule color comparator.

When a CTD or STD is unavailable, hydrocasts will be used to collect water samples for measurement of the parameters identified as minimal. Sampling depths will be calculated by using wire length and angle tables **or by direct measurement, if available.** Temperature will be collected by XBT if available. If **no other method an XBT** is unavailable then temperature of the water samples collected at the surface, mid-water and maximum depth will be determined by an immersion thermometer **other acceptable methods.** If salinity cannot be measured at sea, water samples should be collected and returned to **shore the NMFS Pascagoula Laboratory** for analysis.

Instrument calibration checks are to be made on a daily basis for temperature and salinity. This means that a salinity sample should be taken for return to the laboratory and temperature should be measured independently of the CTD, STD, or other method. An XBT cast can be used to check sample depth and temperature against the CTD or STD. **Calibration of chlorophyll measurements should be conducted prior to and after each cruise to ensure proper instrument functions.** Chlorophyll samples may be sent to NMFS Pascagoula Laboratory for determination. The dissolved oxygen meter of whatever type should be checked against Winkler determinations in the laboratory before and after each cruise. **These quality assessment/quality control (QA/QC) checks are recorded on the data sheets and should be maintained for inclusion**

into the metadata.

Please use lead pencil and make entries dark and legible enough so the key entry operator can read them. All numeric fields on the environmental data sheet (Appendix 1) are to be right justified or aligned with the decimal place. Leading zeros are not required. On all SEAMAP surveys a biological type II data sheet should be completed for every environmental station.

MOVE THIS SECTION TO SECTION 3-BIOLOGICAL SAMPLING

Wind speed and direction measurements are a concern for some vessels. Handheld anemometers are available from wildlife and fishery supply houses and should be used to measure windspeed. Wind direction can be determined by even a handheld compass.

INSTRUCTIONS FOR COLLECTION OF ENVIRONMENTAL DATA

The methods of collecting environmental data and the completion of the environmental data sheet are as follows:

VESSEL - Enter 2-digit numerical code from Appendix 2.

STATION - Enter station number in numerical order. The first two digits for state vessels should be the vessel code. Do not duplicate this number on a cruise.

CRUISE - Enter 3-digit cruise number. The first two digits for state vessels should be the year of the survey followed by a subsequential cruise number.

DATA SOURCE CODE - Enter data source code from Appendix 3.

CLOUD TYPE - Cloud type is no longer collected on Gulf of Mexico SEAMAP cruises.

% CLOUD COVER - Enter percent cloud cover during daylight hours only. Cloud cover is determined for the entire sky. Not just that portion overhead.

SECCHI DISC - Enter secchi disc reading in meters, see Tables 1, 2, and 3 for conversion factors, observing one implied decimal. Take readings only during daylight hours and from shady side of platform. See Appendix 4 for measurements of transparency with Secchi disc.

WATER COLOR (F.U.) - Obtain Forel-Ule (F.U.) reading (daylight hours only), convert Roman numerals to Arabic. See Appendix 5 for taking water color measurements.

STATION LOCATION CODE - Enter S (start) or E (end) for position closest to location where environmental data was actually collected. Enter U if location was unknown.

PRECIPITATION - Enter code from Appendix 6.

SAMPLE DEPTHS - Enter sample depths only in whole meters. See Appendix 7 for hydrocast sampling procedure.

THERMOCLINE - If a thermocline depth can be determined, enter in whole meters. See Appendix 8 for an example of a thermocline.

(RECOMMENDED THIS BE DELETED)

WATER DEPTH - Enter water depth to one decimal place in whole

meters at the point where environmental data was taken. This should be equal to or greater than the maximum sample depth.

TEMPERATURES - Enter temperatures taken at surface, midwater, and maximum sample depths in degrees celsius (Table 4 for conversion factors) observing two implied decimals, adding trailing zeroes if needed. RECORD ONLY XBT, STD OR CTD VALUES. If state vessels have additional equipment for measuring temperature, please document type of equipment. Thermometer readings should be entered in the blocks provided at the bottom of the data sheet.

SALINITIES - Enter salinity measurements taken at surface, midwater, and maximum sample depths in parts per thousand, observing three implied decimals, adding trailing zeros if needed. If samples are taken for later analysis, record vessel code, station number, and cruise on each sample, as well as sample depth. Indicate on the bottom of the form if samples were taken for later analysis. If you collect salinities with a refractometer put the readings in the boxes provided at the bottom of the form. See Appendix 9 for collecting salinity samples from a hydrocast.

CHLOROPHYLL - Enter chlorophyll determinations made at the surface, midwater, and maximum sample depths in milligrams per cubic meter observing four implied decimals. Normally If samples are will be taken for later analysis, If this is the case document the number of samples taken at each depth on the bottom of the form. See Appendix 10 for chlorophyll sampling procedures.

OXYGEN - Enter dissolved oxygen readings for surface, midwater and maximum sample depths in parts per million, observing one implied decimal place. See Appendix 11 for Dissolved Oxygen (D.O.) sampling procedures.

TRANSMISSIVITY - Enter transmission as percent transmission. No decimals are used. This is a measure of the amount of suspended material in the water.

REFERENCE AND SAMPLE TRACKING SECTION (NOT TO BE KEYPUNCHED)

SCAN NUMBER/CL/FILTER TYPE - Complete when CTD is used. Enter CTD scan number from which temperature and salinity data are taken. Enter under "CL" the volume of water filtered for chlorophyll sample. Under "filter type", enter nucleopore, GF/C, or GF/F, depending on filter used.

REFRACTOMETER (PPT) - Enter refractometer readings in ppt. Refractometer readings are not recorded if you are saving a salinity sample or have recorded other measurements for salinity.

THERMOMETER (C°) - Enter thermometer temperature readings in degrees celsius (C°). Temperature readings are not recorded, **in this section**, if you are using other equipment. (CTD, STD or XBT) to record temperature measurements.

SALINITY SAMPLE (✓) - Enter a check in the appropriate boxes if you collect a salinity sample.

CHLOROPHYLL SAMPLE (✓) - Enter a check in the appropriate boxes if you collect a chlorophyll sample.

APPENDICES

APPENDIX 1. ENVIRONMENTAL DATA SHEET

IT WAS SUGGESTED THAT TURBITITY BE CHANGED TO TRANSMISSIVITY; ADD
A DECIMAL PLACE FOR MID-WATER DEPTH.

APPENDIX 2. VESSEL CODES

01---OREGON
02---SILVER BAY
03---GEORGE M. BOWERS
04---OREGON II
05---COMBAT
06---PELICAN
07---FRIGATA
08---KINGFISHER
09---HERNAN CORTEZ
10---GERONIMO
11---UNDAUNTED
12---ANTILLAS
13---CALAMAR
14---ALCYON
15---GULF RANGER
16---WESTERN GULF
17---TOMMY MUNRO
18---TANYA & JOE
19---ONJUNKA
20---JEFF & TINA
21---DELAWARE II
22---OSV ANTELOPE
23---ALABAMA INSHORE VESSELS
24---FLORENCE MAY
25---LOUISIANA INSHORE VESSELS
26---SUNCOASTER
27---MISSISSIPPI INSHORE VESSELS
28---CHAPMAN
29---NISSIHINO MARU #201
30---R/V BELLOWS
31---R.J. KEMP (ARANSAS BAY)
32---MATAGORDA BAY
33---LAGUNA MADRE
34---GALVESTON BAY
35---LUNCON PELICAN
36---HERNAN CORTEZ II (CORAL SEA)
37---OLD COLONY
38---SEAWOLF
39---ATLANTIC HARVESTER
40---SABINE
41---PERSISTANCE
42---CAPTAIN GRUMPY
43---GULF STREAM
44---KELCY ANN
45---MR. JUG
46---CALANUS
47---A. NEEDLER
48---B.I.P.
49---ALBATROSS IV
50---MOLLY M.
51---LADY LISA
52---MISS CARRIE
53---CSS HUDSON

APPENDIX 3. DATA SOURCE CODES

NC	North Carolina
SC	South Carolina
GA	Georgia
FL	Florida
AL	Alabama
MS	Mississippi
LA	Louisiana
TX	Texas
US	National Marine Fisheries Service
99	Other

APPENDIX 4. MEASUREMENT OF TRANSPARENCY WITH SECCHI DISC

The Secchi disc is used to measure transparency of sea water (approximate index) and is dependent upon the available illumination, limiting measurements to daylight periods only. Daylight hours may be defined as being from one hour after sunrise to one hour before sunset. Either standard size Secchi disk can be used. For inshore stations there is no difference in the readings depending on size. For very clear off-shore water the larger size disk should be used.

1. DO NOT wear sunglasses during the measurements.
2. Lower Secchi disc into the water on the shaded side of the ship.
3. Lower disc until it is just perceptible.
4. Note the depth of the disc in meters. The measurement is made from the water surface to the disc.
5. Continue lowering until the disc is no longer visible.
6. Slowly raise the disc until it is barely visible and again note the depth of the disc.
7. Average the two depths and record the resulting depth in the appropriate blocks on the data sheet.

CARM WILL PROVIDE COMMENTS

APPENDIX 5. MEASUREMENT OF WATER COLOR WITH FOREL-ULE

Water color is measured with the Forel-Ule color comparator against the Secchi disc background. The Forel scale (I-X) is primarily for offshore blue to green water. The Ule scale (XI-XXII) is used to measure color of the yellowish to brown inshore waters.

1. DO NOT wear sunglasses during measurement.
2. Lower the Secchi disc to a total depth of one meter below the water surface.
3. Insert the distilled water ampule in the blank hole in the Forel-Ule comparator.
4. Hold the comparator at arm's length so as to view both the Secchi disc and the Forel-Ule scale.
5. Compare the color as seen through the blank hole in the comparator with the color of the water as viewed over the Secchi disc.
6. Determine the value in the comparator that most nearly matches the color of the water over the Secchi disc. Record the value in the appropriate boxes on the data sheet.

APPENDIX 6. PRECIPITATION CODES

0	None
1	Light Rain
2	Moderate Rain
3	Heavy Rain
4	Snow
5	Sleet
6	Sleet/Rain
7	Hail

There has been some question about the meanings of the precipitation codes. This is an attempt to provide some standardization to the meanings.

Light rain would be a rate of precipitation such that most people wouldn't hesitate to step out into it for a couple of minutes or to go from one location to another without protection.

In a moderate rain you would want at least as much protection as would be provided by an umbrella. You would be very wet if you were out without protection for two minutes.

A heavy rain is when you don't want to go out into it at all and you would be soaked to the skin instantly without protection.

APPENDIX 7. HYDROCAST SAMPLING PROCEDURES

Water samples need to be collected to obtain temperature (only if you do not have a CTD, STD or XBT), salinity (only if you do not have a CTD or STD), chlorophyll, and D.O., and for **QA/QC purposes**.

Water samples are collected with the aid of **water collection Niskin** bottles attached to a hydrowire at the surface, mid and bottom depths or at the surface, 100 meters and 200 meters for stations with depths greater than 200 meters. The procedure for a hydrocast with **water collection Niskin** bottles is as follows:

1. Verify (communication with bridge) that ship is on station, is "dead" in the water and oriented so cast is on weather side of ship.
2. Obtain bottom depth from bridge for proper bottle placement on the hydrowire.
3. Attach deepest **water collection Niskin** bottle to hydrowire above a hydroweight as follows:
 - a. Ensure air vent and drain valve are closed.
 - b. Attach the loop in the top stopper wire to the left release mechanism. The bottom stopper wire is clipped below the ball on the top stopper wire.
 - c. Clamp the **water collection Niskin** bottle to the cable finger tight, top clamp first, then bottom clamp.

4. When the first bottle is ready for lowering (just below sea surface), zero the meter wheel.
5. Lower the next bottle until the meter wheel reads the equivalent of the desired depth and measure the wire angle with an inclinometer. Take into account the distance from the deck of the ship to the water surface before attaching the next bottle.
6. Calculate the length of wire required to reach desired depth of each bottle.

See wire angle Tables 1 and 2 in the section titled Collecting Plankton Data or compute using the formulas for computing wire required, depth of net or COS angle:

$$\text{depth of net} = \text{wire out} \times \text{COS angle}$$

$$\text{wire required} = \text{depth} \div \text{COS angle}$$

$$\text{COS angle} = \text{depth} \div \text{wire out}$$

$$(1 \text{ fathom} = 1.83 \text{ meter} = 6 \text{ feet})$$

At shallow water stations an alternative to Steps 4 and 5 is to "bump" the sea floor with the hydroweight and use wire length to determine placement of the mid-water sample.

7. Haul back or pay out wire until the meter wheel reads required wire length for second bottle.

8. Clamp second **water collection Niskin** bottle to hydrowire and set stoppers.
9. Attach a messenger to the bottle at the right release mechanisms and to the hydrowire below the bottle.
10. Pay-out the wire and attach remaining bottles and messengers at the calculated wire length.
11. End cast preparation with a **water collection Niskin** bottle and messenger just below the surface. Record sample depths in appropriate boxes on data sheet.
12. Trip the cast allowing approximately 1 minute per 100 meters of wire length for messenger travel.
13. Retrieve the cast observing ascending cable, and warning winch operator when each bottle is first visible.
14. Remove the bottle from the wire by loosening the bottom clamp first. Care should be taken so as to not shake the bottle or otherwise disturb the water sample before taking the D.O. samples.
15. Take temperature measurements by opening top stopper and immersing hand held thermometer. if XBT is unavailable. Record temperature in appropriate boxes on data sheet.
16. Immediately after taking temperature draw dissolved oxygen samples before retrieving salinity samples.

APPENDIX 8. THERMOCLINE DEPTH

A layer of water with a more intensive temperature gradient (rate of decrease of temperature with increasing depth) than that found in the layers above or below it is called a thermocline. The top of the thermocline is where the slope of the temperature profile changes most abruptly from (vertical) well-mixed to decreasing rapidly with depth. For purposes of this Operational Plan the thermocline "depth" occurs at the upper limit of this layer where it interfaces with the mixed surface layer.

IT WAS SUGGESTED THAT THIS SECTION BE DELETED

APPENDIX 9. COLLECTING WATER SAMPLES FOR SALINITY

1. Salinity samples are to be drawn after all the oxygen samples are collected.
2. Rinse the sample bottles twice, using about one-fourth bottle of water for each rinse.
3. Shake the bottles vigorously during each rinse and pour the rinse water over the bottle cap to rinse it also.
4. Draw the salinity samples directly from the drain spigot, filling the sample bottle to within one-half (1/2) inch of the top.
5. Do not force the cap on the sample bottle too tightly. Pressure supplied between thumb and forefinger is sufficient.
6. Label each sample with: (use a permanent marker)
 - a. date
 - b. time
 - c. cruise number
 - d. vessel code
 - e. station number
 - f. sample depth
7. Store sample in designated area and return to lab for processing.

APPENDIX 10. CHLOROPHYLL SAMPLING PROCEDURES

THIS SECTION WILL BE UPDATED WITH INFORMATION PROVIDED BY CARM

Three replicate surface chlorophyll samples are presently being collected at all SEAMAP stations except those stations inside 20 fathoms off Louisiana. At those Louisiana stations one bottom chlorophyll sample is collected along with the three surface samples.

1. Obtain a 9 liter water sample at surface.
2. Keep water mixed by using an air pump.
3. Filter three replicate samples up to 3 L (3000 ml) each through the GF/C filter or as much as possible in 5 minutes and never exceed 10 minutes.
4. Set vacuum pump at 10-15 psi in GE vacuum.
5. Shake the 1% solution of $MgCO_3$ vigorously and add 1 cc of the solution to the last 100 ml of the three samples before filtration is complete (1% solution = 1 g $MgCO_3$ /100 ml water).
6. Fold each sample filter in half and place all three samples individually in petri dishes, wrap in aluminum foil, and label.
7. Record the following information on the petri dish samples, chlorophyll label and environmental station sheets.

- a. Sample depth _____ e. Vessel _____
b. Station number _____ f. Cruise _____
c. Filter type _____ g. Date _____
d. Volume filtered _____

8. Check the appropriate boxes at the bottom of the data sheet if chlorophyll samples were obtained.

9. Place the samples in the freezer.

There are several points that need to be kept in mind when taking chlorophyll samples. The damaging or breaking algal cells is a problem because when the cell breaks the chlorophyll escapes and ends up passing through the filter. Using too high a vacuum pressure will damage the cells and should therefore be avoided.

Acidity is a major problem because it also causes the algal cells to breakdown and there is a consequent loss of chlorophyll. This is the reason that filters should never be touched with your fingers. Always use a forceps to handle the filters.

Another way of reducing acidity is to add $MgCO_3$ to help preserve the sample. While the samples are in storage, they get banged around and some of the algal cells may be knocked off the filters. To minimize this problem fold the filter in

half before placing it in the petri dish.

At some locations there is occasionally a very high sediment load that makes it impossible to filter the optimal amount of water. In such a situation a smaller quantity of water can be filtered but this always creates some problems. Never pour an unfilterable portion of water off the filter. This will result in algal cells that should have been on the filter being dumped out as well. Generally one will realize within a few minutes that there is no way to filter the optimal amount. At that point it is recommended that you start over. Discard the filter and water sample that is over the filter. Put on new filter and measure out a quantity of the sample water that you are certain will go through the filter. When that sample is nearly filtered, add the $MgCO_3$ and proceed as normal. Adding the $MgCO_3$ will also contribute to clogging the filter so this should be considered when deciding how much water is going to be filtered.

Light will cause chlorophyll to breakdown. Never leave samples standing for long periods before filtering and once the filtration is finished the samples should be kept in the dark. That is the reason for wrapping samples in aluminum foil.

Lastly, freeze the samples as soon as possible to prevent

spoilage, at which time the cells breakdown and the
chlorophyll escapes.

APPENDIX 11. PROCEDURES FOR COLLECTING DISSOLVED OXYGEN (DO)

a) DRAWING SAMPLES

Water samples for dissolved oxygen determination should be drawn from the **water collection Niskin** bottles as soon as the bottles are retrieved and before any other samples are taken.

1. Attach a plastic tube of the proper diameter, about 25 cm in length, to the spigot at the bottom of the **water collection Niskin** bottle. Lift the free end of the tubing to near the level of the air vent, and then open the air vent and the spigot. Letting the tubing fill with water. There should be no air trapped in the tubing. If any air bubble are observed, let the water flow out slowly by lowering the free end of the tubing slightly and tap on the tubing until the bubbles are cleared.
2. Place the free end of the tube deep into the B.O.D. bottle.
3. Close drain valve and discard water.
4. Reinsert the tube into the bottle near the bottom and allow water to flow.
5. Count the number of seconds it takes for the bottle to fill and begin to overflow the B.O.D. bottle.

6. Continue counting and allow the water to overflow until the bottle has filled at least three times. For example: If it takes a count of 7 to fill the bottle, continue letting the water overflow and count to 21.
7. Place the ground glass stopper in the top of the B.O.D. bottle and as you do so, twist it gently. Leave the excess water on top of the bottle. This provides an additional air seal. Draw samples from the remaining **water collection** Niskin bottles following the same procedure.
8. Samples are now ready to be measured with an oxygen meter or by the Winkler titration method within 30 minutes of collection.

b) CALIBRATING THE YSI OXYGEN METER. While these instructions are specific to a YSI meter, each type of oxygen meter should come with instructions on how to calibrate it and how often to calibrate. If you don't have calibration information for your instrument you should contact the manufacturer for instructions.

Air calibration of the YSI oxygen meter is straight forward and requires only a few minutes to accomplish once the meter and probe have been prepared and the instrument stabilizes. Preparing the instrument prior to making the hydrocast allows optimum time

(30 minutes) for stabilization and reduces the time between drawing the samples and taking measurements. Procedures for air calibration follows:

1. Check probe membrane for tears and bubbles in the electrolyte. Replace membrane if necessary and refill probe with electrolyte.

2. Place the probe in moisture saturated air. B.O.D. probes are placed in B.O.D. bottles partially filled (about 1") with FRESH water.

3. Switch meter to RED LINE and adjust.

4. Switch meter to ZERO and adjust.

5. Adjust SALINITY knob to FRESH, i.e fully counter clockwise.

6. Switch meter to TEMPERATURE and read.

7. Use probe temperature to determine calibration value from the table "Solubility of Oxygen in Fresh Water" (see Table 5).

8. Switch to desired dissolved oxygen range 0-5, 0-10, or 0-20, and adjust CALIBRATE knob until meter reads the correct calibration value from Step 7. Verify calibration stability. Readjust if necessary.

The probe is now calibrated and should be recalibrated at each hydro station.

c) MEASURING DISSOLVED OXYGEN WITH THE YSI METER

1. Adjust the SALINITY knob on the YSI meter to the salinity of the sample (use refractometer to determine salinity if CTD is not operational, conversion factors Table 6).
2. Place probe and stirrer in the sample and switch on stirrer (toggle switch on top of probe).
3. When the meter has stabilized, read D.O. The reading should be taken within 30 seconds of immersion of the probe.
4. Leave instrument on (switch at RED LINE) between measurements to avoid necessity for repolarizing the probe.
5. Record D.O. measurements in appropriate blocks on the station sheet.
6. A calibration check of the oxygen meter will be performed during the first hydrocast each day.
7. If this is the first hydrocast of the day draw a second water sample (Steps 1-8) from each Niskin bottle and measure dissolved oxygen (Steps 9-12) with a SECOND calibrated dissolved oxygen meter.
8. Record the second D.O. measurements just ABOVE the previously recorded measurements on the station sheet.
9. Occasionally dissolved oxygen readings will appear lower

or higher than expected, and may indicate conditions of hypoxia or supersaturation respectively. These readings should be substantiated when below 2 ppm or above saturation levels (Table 7) for the existing temperature and salinity of the sample. Water samples with questionable readings should be checked by both of the following methods.

a. Run water sample for determination of dissolved oxygen using a SECOND calibrated meter.

b. Water sample should be titrated using the field titration kit (Hach) supplied.

TABLES

TABLE 1. Conversions for meters to fathoms. The center "unit" column can denote an observed depth in either meters or fathoms. To convert from either scale to the other one simply go to the value in the units column that you want converted and look in the right hand column for the fathom equivalent of that value in meters, or in the left hand column for the meter equivalent of that value in fathoms. For example, 10 units in the meter scale equal 5.47 fathoms, and 10 units in the fathom scale equals 18.29 meters.

Meters	Units	Fathoms
1.83	1	0.55
3.66	2	1.09
5.49	3	1.64
7.31	4	2.19
9.14	5	2.73
10.97	6	3.28
12.80	7	3.83
14.63	8	4.37
16.46	9	4.92
18.29	10	5.47
20.11	11	6.01
21.95	12	6.56
23.77	13	7.11
25.60	14	7.65
27.43	15	8.20
29.26	16	8.75
31.09	17	9.29
32.91	18	9.84
34.74	19	10.39
36.57	20	10.94
38.40	21	11.48
40.23	22	12.03
42.05	23	12.58
43.89	24	13.12
45.72	25	13.67
47.55	26	14.22
49.38	27	14.76
51.20	28	15.31
53.03	29	15.86
54.86	30	16.40
56.69	31	16.95
58.52	32	17.50
60.34	33	18.04
62.17	34	18.59
64.00	35	19.14
65.83	36	19.68
67.66	37	20.23
69.48	38	20.78
71.31	39	21.32
73.14	40	21.87
74.97	41	22.42
76.80	42	22.96
78.63	43	23.51
80.45	44	24.06
82.28	45	24.61
84.11	46	25.15
85.95	47	25.70
87.78	48	26.25
89.61	49	26.79
91.44	50	27.34

Meters	Units	Fathoms
93.27	51	27.89
95.09	52	28.43
96.92	53	28.98
98.75	54	29.52
100.58	55	30.07
102.41	56	30.62
104.23	57	31.16
106.06	58	31.71
107.89	59	32.26
109.72	60	32.80
111.55	61	33.35
113.38	62	33.90
115.20	63	34.45
117.03	64	34.99
118.86	65	35.54
120.69	66	36.09
122.52	67	36.63
124.34	68	37.18
126.17	69	37.73
128.00	70	38.27
129.84	71	38.82
131.66	72	39.37
133.50	73	39.91
135.31	74	40.46
137.16	75	41.01
138.97	76	41.55
140.81	77	42.10
142.63	78	42.65
144.47	79	43.20
146.28	80	43.74
148.13	81	44.29
149.94	82	44.84
151.78	83	45.38
153.59	84	45.93
155.44	85	46.48
157.25	86	47.02
159.09	87	47.57
160.91	88	48.12
162.75	89	48.66
164.56	90	49.21
166.41	91	49.76
168.22	92	50.30
170.06	93	50.85
171.91	94	51.40
173.72	95	51.95
175.56	96	52.49
177.38	97	53.04
179.22	98	53.59
181.03	99	54.13
182.88	100	54.68

Meters	Units	Fathoms
184.69	101	55.23
186.53	102	55.77
188.34	103	56.32
190.19	104	56.87
192.00	105	57.41
193.84	106	57.95
195.66	107	58.50
197.50	108	59.05
199.31	109	59.59
201.16	110	60.14
202.97	111	60.69
204.81	112	61.23
206.63	113	61.78
208.47	114	62.33
210.28	115	62.88
212.13	116	63.42
213.97	117	63.97
215.78	118	64.52
217.63	119	65.06
219.44	120	65.61
221.28	121	66.16
223.09	122	66.70
224.94	123	67.25
226.75	124	67.80
228.59	125	68.34
230.41	126	68.89
232.25	127	69.44
234.06	128	69.98
235.91	129	70.53
237.72	130	71.08
239.56	131	71.63
241.38	132	72.17
243.22	133	72.72
245.03	134	73.27
246.88	135	73.81
248.69	136	74.36
250.53	137	74.91
252.34	138	75.45
254.19	139	76.00
256.00	140	76.55
257.81	141	77.09
259.69	142	77.64
261.50	143	78.19
263.31	144	78.73
265.13	145	79.28
267.00	146	79.83
268.81	147	80.38
270.63	148	80.92
272.44	149	81.47
274.31	150	82.02

TABLE 1. Conversions for meters to fathoms. (Cont'd)

Meters	Units	Fathoms
276.13	151	82.56
277.94	152	83.11
279.75	153	83.66
281.63	154	84.20
283.44	155	84.75
285.25	156	85.30
287.06	157	85.84
288.94	158	86.39
290.75	159	86.94
292.56	160	87.48
294.38	161	88.03
296.25	162	88.58
298.06	163	89.13
299.88	164	89.67
301.75	165	90.22
303.56	166	90.77
305.38	167	91.31
307.19	168	91.86
309.06	169	92.41
310.88	170	92.95
312.69	171	93.50
314.50	172	94.05
316.38	173	94.59
318.19	174	95.14
320.00	175	95.69
321.81	176	96.23
323.69	177	96.78
325.50	178	97.33
327.31	179	97.88
329.13	180	98.42
331.00	181	98.97
332.81	182	99.52
334.63	183	100.06
336.44	184	100.61
338.31	185	101.16
340.13	186	101.70
341.94	187	102.25
343.81	188	102.80
345.63	189	103.34
347.44	190	103.89
349.25	191	104.44
351.13	192	104.98
352.94	193	105.53
354.75	194	106.08
356.56	195	106.63
358.44	196	107.17
360.25	197	107.72
362.06	198	108.27
363.88	199	108.81
365.75	200	109.36

Meters	Units	Fathoms
367.56	201	109.91
369.38	202	110.45
371.19	203	111.00
373.06	204	111.55
374.88	205	112.09
376.69	206	112.64
378.50	207	113.19
380.38	208	113.73
382.19	209	114.27
384.00	210	114.81
385.88	211	115.36
387.69	212	115.91
389.50	213	116.45
391.31	214	117.00
393.19	215	117.55
395.00	216	118.09
396.81	217	118.64
398.63	218	119.19
400.50	219	119.73
402.31	220	120.28
404.13	221	120.83
405.94	222	121.38
407.81	223	121.92
409.63	224	122.47
411.44	225	123.02
413.25	226	123.56
415.13	227	124.11
416.94	228	124.66
418.75	229	125.20
420.56	230	125.75
422.44	231	126.30
424.25	232	126.84
426.06	233	127.39
427.94	234	127.94
429.75	235	128.47
431.56	236	129.03
433.38	237	129.56
435.25	238	130.13
437.06	239	130.66
438.88	240	131.22
440.69	241	131.75
442.56	242	132.31
444.38	243	132.84
446.19	244	133.41
448.00	245	133.94
449.88	246	134.50
451.69	247	135.03
453.50	248	135.59
455.31	249	136.13
457.19	250	136.69

1 Meter = 0.5468 fathoms
 1 fathom = 1.829 meters

TABLE 2. Conversions for meters to feet. The center "units" column can denote an observed depth in either meters or feet. To convert from either scale to the other one simply go to the value in the units column that you want converted and look in the right hand column for the feet equivalent of that value in meters, or in the left hand column for the meter equivalent of that value in feet. For example, 10 units in the meter scale equals 32.8 feet, and 10 units in the feet scale equals 3.05 meters.

Meters	Units	Feet
0.30	1	3.28
0.61	2	6.56
0.91	3	9.84
1.22	4	13.12
1.52	5	16.40
1.83	6	19.68
2.13	7	22.96
2.44	8	26.25
2.74	9	29.52
3.05	10	32.80
3.35	11	36.09
3.66	12	39.37
3.96	13	42.65
4.27	14	45.93
4.57	15	49.21
4.88	16	52.49
5.18	17	55.77
5.49	18	59.05
5.79	19	62.33
6.10	20	65.61
6.40	21	68.89
6.71	22	72.17
7.01	23	75.45
7.31	24	78.73
7.62	25	82.02
7.92	26	85.30
8.23	27	88.58
8.53	28	91.86
8.84	29	95.14
9.14	30	98.42
9.45	31	101.70
9.75	32	104.98
10.06	33	108.27
10.36	34	111.55
10.67	35	114.81
10.97	36	118.09
11.28	37	121.38
11.58	38	124.66
11.89	39	127.94
12.19	40	131.22
12.50	41	134.50
12.80	42	137.78
13.11	43	141.06
13.41	44	144.34
13.71	45	147.63
14.02	46	150.91
14.32	47	154.19
14.63	48	157.47
14.93	49	160.75
15.24	50	164.03

Meters	Units	Feet
15.54	51	167.31
15.85	52	170.59
16.15	53	173.88
16.46	54	177.16
16.76	55	180.44
17.07	56	183.72
17.37	57	187.00
17.68	58	190.28
17.98	59	193.56
18.29	60	196.84
18.59	61	200.13
18.89	62	203.41
19.20	63	206.69
19.50	64	209.97
19.81	65	213.25
20.11	66	216.53
20.42	67	219.81
20.72	68	223.09
21.03	69	226.38
21.34	70	229.63
21.64	71	232.91
21.95	72	236.19
22.25	73	239.47
22.55	74	242.75
22.86	75	246.03
23.16	76	249.31
23.47	77	252.59
23.77	78	255.88
24.08	79	259.13
24.38	80	262.44
24.69	81	265.69
24.99	82	269.00
25.30	83	272.25
25.60	84	275.56
25.91	85	278.81
26.21	86	282.13
26.52	87	285.38
26.82	88	288.69
27.13	89	291.94
27.43	90	295.25
27.73	91	298.50
28.04	92	301.81
28.34	93	305.06
28.65	94	308.38
28.95	95	311.63
29.26	96	314.94
29.56	97	318.19
29.87	98	321.50
30.17	99	324.75
30.48	100	328.06

Meters	Units	Feet
30.78	101	331.31
31.09	102	334.63
31.39	103	337.88
31.70	104	341.19
32.00	105	344.44
32.30	106	347.75
32.61	107	351.00
32.91	108	354.31
33.22	109	357.56
33.52	110	360.88
33.83	111	364.13
34.13	112	367.44
34.44	113	370.69
34.74	114	374.00
35.05	115	377.25
35.35	116	380.56
35.66	117	383.81
35.96	118	387.13
36.27	119	390.38
36.57	120	393.69
36.88	121	396.94
37.18	122	400.25
37.48	123	403.50
37.79	124	406.81
38.09	125	410.06
38.40	126	413.38
38.70	127	416.63
39.01	128	419.94
39.31	129	423.19
39.62	130	426.50
39.92	131	429.75
40.23	132	433.06
40.53	133	436.31
40.84	134	439.63
41.14	135	442.88
41.45	136	446.19
41.75	137	449.44
42.05	138	452.75
42.37	139	456.00
42.67	140	459.25
42.98	141	462.56
43.28	142	465.81
43.59	143	469.13
43.89	144	472.38
44.20	145	475.69
44.50	146	478.94
44.80	147	482.25
45.11	148	485.50
45.41	149	488.81
45.72	150	492.06

TABLE 2. Conversions for meters to feet. (Cont'd)

Meters	Units	Feet
46.02	151	495.38
46.33	152	498.63
46.63	153	501.94
46.94	154	505.19
47.24	155	508.50
47.55	156	511.75
47.85	157	515.00
48.16	158	518.25
48.46	159	521.63
48.77	160	524.88
49.07	161	528.13
49.38	162	531.38
49.68	163	534.75
49.98	164	538.00
50.29	165	541.25
50.59	166	544.50
50.90	167	547.88
51.20	168	551.13
51.51	169	554.38
51.81	170	557.63
52.12	171	561.00
52.42	172	564.25
52.73	173	567.50
53.03	174	570.75
53.34	175	574.13
53.64	176	577.38
53.95	177	580.63
54.25	178	583.88
54.55	179	587.25
54.86	180	590.50
55.16	181	593.75
55.47	182	597.00
55.77	183	600.38
56.08	184	603.63
56.38	185	606.88
56.69	186	610.13
56.99	187	613.50
57.30	188	616.75
57.60	189	620.00
57.91	190	623.25
58.21	191	626.63
58.52	192	629.88
58.82	193	633.13
59.13	194	636.38
59.43	195	639.75
59.73	196	643.00
60.04	197	646.25
60.34	198	649.50
60.65	199	652.88
60.95	200	656.13

Meters	Units	Feet
61.26	201	659.38
61.56	202	662.63
61.87	203	666.00
62.17	204	669.25
62.48	205	672.50
62.78	206	675.75
63.09	207	679.13
63.39	208	682.38
63.70	209	685.63
64.00	210	688.88
64.31	211	692.13
64.61	212	695.50
64.92	213	698.75
65.22	214	702.00
65.53	215	705.25
65.83	216	708.63
66.14	217	711.88
66.44	218	715.13
66.75	219	718.38
67.05	220	721.75
67.36	221	725.00
67.66	222	728.25
67.97	223	731.50
68.27	224	734.88
68.58	225	738.13
68.88	226	741.38
69.19	227	744.63
69.48	228	748.00
69.80	229	751.25
70.09	230	754.50
70.41	231	757.75
70.70	232	761.13
71.02	233	764.38
71.31	234	767.63
71.63	235	770.88
71.92	236	774.25
72.23	237	777.50
72.53	238	780.75
72.84	239	784.00
73.14	240	787.38
73.45	241	790.63
73.75	242	793.88
74.06	243	797.13
74.36	244	800.50
74.67	245	803.75
74.97	246	807.00
75.28	247	810.25
75.58	248	813.63
75.89	249	816.88
76.19	250	820.13

1 Meter = 3.281 feet
 1 Foot = 0.305 meters

TABLE 3. Conversions for feet to fathoms. The center "units" column in this table can denote an observed depth in either feet or fathoms. To convert from either scale to the other one simply go to the value in the units column that you want converted and look in the right hand column for the fathom equivalent of that value in feet, or in the left hand column for the feet equivalent of that value in fathoms. For example, 10 units in the feet scale equals 1.67 fathoms and 10 units in the fathom scale equals 60 feet meters.

Feet	Units	Fathoms
6	1	0.17
12	2	0.33
18	3	0.50
24	4	0.67
30	5	0.83
36	6	1.00
42	7	1.17
48	8	1.33
54	9	1.50
60	10	1.67
66	11	1.83
72	12	2.00
78	13	2.17
84	14	2.33
90	15	2.50
96	16	2.67
102	17	2.83
108	18	3.00
114	19	3.17
120	20	3.33
126	21	3.50
132	22	3.67
138	23	3.83
144	24	4.00
150	25	4.17
156	26	4.33
162	27	4.50
168	28	4.67
174	29	4.83
180	30	5.00
186	31	5.17
192	32	5.33
198	33	5.50
204	34	5.67
210	35	5.83
216	36	6.00
222	37	6.17
228	38	6.33
234	39	6.50
240	40	6.67
246	41	6.83
252	42	7.00
258	43	7.17
264	44	7.33
270	45	7.50
276	46	7.67
282	47	7.83
288	48	8.00
294	49	8.17
300	50	8.33

Feet	Units	Fathoms
306	51	8.50
312	52	8.67
318	53	8.83
324	54	9.00
330	55	9.17
336	56	9.33
342	57	9.50
348	58	9.67
354	59	9.83
360	60	10.00
366	61	10.17
372	62	10.33
378	63	10.50
384	64	10.67
390	65	10.83
396	66	11.00
402	67	11.17
408	68	11.33
414	69	11.50
420	70	11.67
426	71	11.83
432	72	12.00
438	73	12.17
444	74	12.33
450	75	12.50
456	76	12.67
462	77	12.83
468	78	13.00
474	79	13.17
480	80	13.33
486	81	13.50
492	82	13.67
498	83	13.83
504	84	14.00
510	85	14.17
516	86	14.33
522	87	14.50
528	88	14.67
534	89	14.83
540	90	15.00
546	91	15.17
552	92	15.33
558	93	15.50
564	94	15.67
570	95	15.83
576	96	16.00
582	97	16.16
588	98	16.33
594	99	16.50
600	100	16.66

Feet	Units	Fathoms
606	101	16.83
612	102	17.00
618	103	17.16
624	104	17.33
630	105	17.50
636	106	17.66
642	107	17.83
648	108	18.00
654	109	18.16
660	110	18.33
666	111	18.50
672	112	18.66
678	113	18.83
684	114	19.00
690	115	19.16
696	116	19.33
702	117	19.50
708	118	19.66
714	119	19.83
720	120	20.00
726	121	20.16
732	122	20.33
738	123	20.50
744	124	20.66
750	125	20.83
756	126	21.00
762	127	21.16
768	128	21.33
774	129	21.50
780	130	21.66
786	131	21.83
792	132	22.00
798	133	22.16
804	134	22.33
810	135	22.50
816	136	22.66
822	137	22.83
828	138	23.00
834	139	23.16
840	140	23.33
846	141	23.50
852	142	23.66
858	143	23.83
864	144	24.00
870	145	24.16
876	146	24.33
882	147	24.50
888	148	24.66
894	149	24.83
900	150	25.00

TAB E 3. Conversion for feet to fathoms. (Cont'd)

Feet	Units	Fathoms
906	151	25.16
912	152	25.33
918	153	25.50
924	154	25.66
930	155	25.83
936	156	26.00
942	157	26.16
948	158	26.33
954	159	26.50
960	160	26.66
966	161	26.83
972	162	27.00
978	163	27.16
984	164	27.33
990	165	27.50
996	166	27.66
1002	167	27.83
1008	168	28.00
1014	169	28.16
1020	170	28.33
1026	171	28.50
1032	172	28.66
1038	173	28.83
1044	174	29.00
1050	175	29.16
1056	176	29.33
1062	177	29.50
1068	178	29.66
1074	179	29.83
1080	180	30.00
1086	181	30.16
1092	182	30.33
1098	183	30.50
1104	184	30.66
1110	185	30.83
1116	186	31.00
1122	187	31.16
1128	188	31.33
1134	189	31.50
1140	190	31.66
1146	191	31.83
1152	192	32.00
1158	193	32.16
1164	194	32.33
1170	195	32.50
1176	196	32.66
1182	197	32.83
1188	198	33.00
1194	199	33.16
1200	200	33.33

Feet	Units	Fathoms
1206	201	33.50
1212	202	33.66
1218	203	33.83
1224	204	34.00
1230	205	34.16
1236	206	34.33
1242	207	34.50
1248	208	34.66
1254	209	34.83
1260	210	35.00
1266	211	35.16
1272	212	35.33
1278	213	35.50
1284	214	35.66
1290	215	35.83
1296	216	36.00
1302	217	36.16
1308	218	36.33
1314	219	36.50
1320	220	36.66
1326	221	36.83
1332	222	37.00
1338	223	37.16
1344	224	37.33
1350	225	37.50
1356	226	37.66
1362	227	37.83
1368	228	38.00
1374	229	38.16
1380	230	38.33
1386	231	38.50
1392	232	38.66
1398	233	38.83
1404	234	39.00
1410	235	39.16
1416	236	39.33
1422	237	39.50
1428	238	39.66
1434	239	39.83
1440	240	40.00
1446	241	40.16
1452	242	40.33
1458	243	40.50
1464	244	40.66
1470	245	40.83
1476	246	41.00
1482	247	41.16
1488	248	41.33
1494	249	41.50
1500	250	41.66

1 Foot = 0.1667 fathoms
 1 Fathom = 6 feet

TABLE 4. Temperature conversion table. The numbers in the columns between those marked C and F refer to the temperature either Centigrade or Fahrenheit which it is desired to convert into the other scale. If converting from Fahrenheit to Centigrade find the equivalent temperature in left hand column marked C and in like manner find equivalent temperature in right hand column when converting from Centigrade to Fahrenheit.

C°	F°	C°	F°	C°	F°
-40.0	-40	-40.0	-9.4	15	59.0
-39.4	-39	-38.2	-8.9	16	60.8
-38.9	-38	-36.4	-8.3	17	62.6
-38.3	-37	-34.6	-7.8	18	64.4
-37.8	-36	-32.8	-7.2	19	66.2
-37.2	-35	-31.0	-6.7	20	68.0
-36.7	-34	-29.2	-6.1	21	69.8
-36.1	-33	-27.4	-5.6	22	71.6
-35.6	-32	-25.6	-5.0	23	73.4
-35.0	-31	-23.8	-4.4	24	75.2
-34.4	-30	-22.0	-3.9	25	77.0
-33.9	-29	-20.2	-3.3	26	78.8
-33.3	-28	-18.4	-2.8	27	80.6
-32.8	-27	-16.6	-2.2	28	82.4
-32.2	-26	-14.8	-1.7	29	84.2
-31.7	-25	-13.0	-1.1	30	86.0
-31.1	-24	-11.2	-0.6	31	87.8
-30.6	-23	-9.4	0.0	32	89.6
-30.0	-22	-7.6	0.6	33	91.4
-29.4	-21	-5.8	1.1	34	93.2
-28.9	-20	-4.0	1.7	35	95.0
-28.3	-19	-2.2	2.2	36	95.8
-27.8	-18	-0.4	2.8	37	98.6
-27.2	-17	1.4	3.3	38	100.4
-26.7	-16	3.2	3.9	39	102.2
-26.1	-15	5.0	4.4	40	104.0
-25.6	-14	6.8	5.0	41	105.8
-25.0	-13	8.6	5.6	42	107.6
-24.4	-12	10.4	6.1	43	109.4
-23.9	-11	12.2	6.7	44	111.2
-23.3	-10	14.0	7.2	45	113.0
-22.8	-9	15.8	7.8	46	114.8
-22.2	-8	17.6	8.3	47	116.6
-21.7	-7	19.4	8.9	48	118.4
-21.1	-6	21.2	9.4	49	120.2
-20.6	-5	23.0	10.0	50	122.0
-20.0	-4	24.8	10.6	51	123.8
-19.4	-3	26.6	11.1	52	125.6
-13.9	-2	28.4	11.7	53	127.4
-18.3	-1	30.2	12.2	54	129.2
-17.8	0	32.0	12.8	55	131.0
-17.2	1	33.8	13.3	56	132.8
-16.7	2	35.6	13.9	57	134.6
-16.1	3	37.4	14.4	58	136.4
-15.6	4	39.2	15.0	59	138.2
-15.0	5	41.0	15.6	60	140.0
-14.4	6	42.8	16.1	61	141.8
-13.9	7	44.6	16.7	62	143.6
-13.3	8	46.4	17.2	63	145.4
-12.8	9	48.2	17.8	64	147.2
-12.2	10	50.0	18.3	65	149.0
-11.7	11	51.8	18.9	66	150.8
-11.1	12	53.6	19.4	67	152.6
-10.6	13	55.4	20.0	68	154.4
-10.0	14	57.2	20.6	69	156.2
21.1	70	158.0			
21.7	71	159.8			
22.2	72	161.6			
22.8	73	163.4			
23.3	74	165.2			
23.9	75	167.0			
24.4	76	168.8			
25.0	77	170.6			
25.6	78	172.4			
26.1	79	174.2			
26.7	80	176.0			
27.2	81	177.8			
27.8	82	179.6			
28.3	83	181.4			
28.9	84	183.2			
29.4	85	185.0			
30.0	86	186.8			
30.6	87	188.6			
31.1	88	190.4			
31.7	89	192.2			
32.2	90	194.0			
32.8	91	195.8			
33.3	92	197.6			
33.9	93	199.4			
34.4	94	201.2			
35.0	95	203.0			
35.6	96	204.8			
36.1	97	206.6			
36.7	98	208.4			
37.2	99	210.2			
37.8	100	212.0			
38.3	101	213.8			
38.9	102	215.6			
39.4	103	217.4			
40.0	104	219.2			
40.6	105	221.0			
41.1	106	222.8			
41.7	107	224.6			
42.2	108	226.4			
42.8	109	228.2			
43.3	110	230.0			
43.9	111	231.8			
44.4	112	233.6			
45.0	113	235.4			
45.6	114	237.2			
46.1	115	239.0			
46.7	116	240.8			
47.2	117	242.6			
47.8	118	244.4			
48.3	119	246.2			
48.9	120	248.0			
49.4	121	249.8			
50.0	122	251.6			
50.6	123	253.4			
51.1	124	255.2			

TABLE 5. SOLUBILITY OF OXYGEN IN FRESH WATER

Temp. °C	Dissolved Oxygen PPM	Temp. °C	Dissolved Oxygen PPM
0	14.6	23	8.7
1	14.2	24	8.5
2	13.9	25	8.4
3	13.5	26	8.2
4	13.2	27	8.1
5	12.8	28	7.9
6	12.5	29	7.8
7	12.2	30	7.7
8	11.9	31	7.5
9	11.6	32	7.4
10	11.3	33	7.3
11	11.1	34	7.2
12	10.8	35	7.1
13	10.6	36	7.0
14	10.4	37	6.8
15	10.2	38	6.7
16	9.9	39	6.6
17	9.7	40	6.5
18	9.5	41	6.4
19	9.3	42	6.3
20	9.2	43	6.2
21	9.0	44	6.1
22	8.8	45	6.0

Source: Derived from "Standard Methods for the Examination of Water and Wastewater."

TABLE 6. Conversion - Brix to Salinity.

Brix	Salinity (PPT)	Brix	Salinity (PPT)
2.5	18.8	3.8	28.8
2.6	19.6	3.9	29.4
2.7	20.4	4.0	30.2
2.8	21.2	4.1	31.0
2.9	22.0	4.2	31.8
3.0	22.7	4.3	32.5
3.1	23.5	4.4	33.3
3.2	24.2	4.5	34.2
3.3	25.0	4.6	35.0
3.4	25.8	4.7	35.5
3.5	26.4	4.8	36.3
3.6	27.2	4.9	37.2
3.7	28.0	5.0	38.0

TABLE 6. COMPUTED WIRE LENGTH FOR NISKIN BOTTLE PLACEMENT


Wire Angle

Desired Sample Depth	10°	15°	20°	25°	30°	35°	40°	45°	50°	55°	60°
10	10	10	10	11	11	12	13	14	15	17	19
20	20	20	21	22	23	24	26	28	31	34	39
30	30	31	31	33	34	36	39	42	46	52	59
40	40	41	42	44	46	48	52	56	62	69	79
50	50	51	53	55	57	61	65	70	77	87	99
60	60	62	63	66	69	73	78	84	93	104	119
70	71	72	74	77	80	85	91	98	108	122	139
80	81	82	85	88	92	97	104	113	124	139	159
90	91	93	95	99	103	109	117	127	140	156	179
100	101	103	106	110	115	122	130	141	155	174	199
110	111	113	117	121	127	134	143	155	171	191	219
120	121	124	127	132	138	146	156	169	186	209	239
130	132	134	138	143	150	158	169	183	202	226	259
140	142	144	148	154	161	170	182	197	217	244	279
150	152	155	159	165	173	183	195	212	233	261	299
160	162	165	170	176	184	195	208	226	248	278	319
170	172	175	180	187	196	207	221	240	264	296	339
180	182	186	191	198	207	219	234	254	280	313	359
190	192	196	202	209	219	231	248	268	295	331	379
200	203	207	212	220	230	244	261	282	311	348	399

TABLE 7. DISSOLVED OXYGEN SATURATION VALUES IN SEA WATER
(m%)

Chlorinity Salinity	0	0	10	15	16	17	18	19	20	36.11
Temp. °C	0	0	9.06	18.08	27.11	28.91	30.72	32.52	34.33	36.11
0	14.6	13.8	13.0	12.1	11.9	11.8	11.6	11.4	11.3	
1	14.2	13.4	12.6	11.8	11.6	11.5	11.3	11.1	11.0	
2	13.8	13.1	12.3	11.5	11.3	11.2	11.1	10.9	10.8	
3	13.5	12.7	12.0	11.2	11.1	10.8	10.7	10.6	10.5	
4	13.1	12.4	11.7	11.0	10.8	10.6	10.5	10.4	10.3	
5	12.8	12.1	11.4	10.7	10.6	10.4	10.3	10.1	10.0	
6	12.5	11.8	11.1	10.5	10.4	10.2	10.1	9.9	9.8	
7	12.2	11.5	10.9	10.2	10.2	10.0	9.9	9.7	9.6	
8	11.9	11.2	10.6	10.0	10.0	9.8	9.7	9.5	9.4	
9	11.6	11.0	10.4	9.8	9.7	9.6	9.5	9.3	9.2	
10	11.3	10.7	10.1	9.6	9.5	9.4	9.2	9.1	9.0	
11	11.1	10.5	9.9	9.4	9.3	9.2	9.0	8.8	8.8	
12	10.8	10.3	9.7	9.2	9.1	9.0	8.8	8.6	8.6	
13	10.6	10.1	9.5	9.0	8.8	8.7	8.6	8.5	8.5	
14	10.4	9.9	9.3	8.8	8.6	8.5	8.5	8.3	8.3	
15	10.2	9.7	9.1	8.6	8.5	8.4	8.3	8.2	8.1	
16	10.0	9.5	9.0	8.5	8.3	8.3	8.2	8.1	8.0	
17	9.7	9.3	8.8	8.3	8.1	8.1	8.0	7.9	7.8	
18	9.5	9.1	8.6	8.2	8.0	8.0	7.9	7.8	7.7	
19	9.4	8.9	8.5	8.0	7.9	7.8	7.7	7.6	7.6	
20	9.2	8.7	8.3	7.9	7.8	7.7	7.6	7.5	7.4	
21	9.0	8.6	8.1	7.7	7.7	7.6	7.4	7.4	7.3	
22	8.8	8.4	8.0	7.6	7.5	7.4	7.3	7.2	7.1	
23	8.7	8.3	7.9	7.4	7.4	7.3	7.2	7.1	7.0	
24	8.5	8.1	7.7	7.3	7.3	7.1	7.0	6.9	6.9	
25	8.4	8.0	7.0	7.2	7.1	7.0	6.9	6.8	6.7	
26	8.2	7.8	7.4	7.0	7.0	6.9	6.8	6.7	6.6	
27	8.1	7.7	7.3	6.9	6.8	6.8	6.7	6.6	6.5	
28	7.9	7.5	7.1	6.8	6.6	6.6	6.5	6.4	6.4	
29	7.8	7.4	7.0	6.6	6.5	6.5	6.4	6.3	6.3	
30	7.6	7.3	6.9	6.5	6.4	6.3	6.3	6.2	6.1	

Supersaturation may be 30% greater


COMMITTEE CHAIRMAN

**Blue Crab TTF Conference Call
MINUTES
Tuesday, January 13, 1998**

The conference call began at 2:30 p.m. CST with the following online: Harriet Perry (GCRL), Vince Guillory (LDWF), Phil Steel (FDEP), Tom Wagner (TPWD), Paul Hammerschmidt (TPWD), John Petterson (IAI), and Steve VanderKooy (GSMFC).

Introduction

S. VanderKooy welcomed everyone and asked John Petterson introduced himself to the group and highlight his qualifications. Dr. Petterson indicated that the original schedule for deliverables had a research design due February 2 and a draft survey instrument design due around the 15th of February. This call should make it possible to have the draft survey design available for comment to use as early as the February 2 deadline. Availability of individual state mailing and phone lists will further speed the process and will be necessary for the completion of the research design. These items will be discussed in greater detail later. Dr. Petterson indicated the benefits of having been able to read previous FMP sociology sections. They have allowed his staff to better understand the type of information we will be looking for and see the format for the completed project.

Mail Survey

The adapted oyster survey provides some of the ideas which we want to see addressed, and Dr. Petterson proceeded to layout step-by-step concerns he had from a statistical point of view. Dr. Petterson noted that the key in any survey is getting meaningful answers which can be quantified in some way. Simple yes or no questions result in the loss of information but can be enhanced with rewording. All agreed that the mail survey should be kept short but should not compromise its effectiveness. A single, double-sided page that can be tri-folded would be ideal but may require additional length to be comprehensive.

Dr. Petterson indicated that the mail survey will consist of two major components; those questions which address demographics, ethnicity and education and those questions which address effort, perception of management issues, opinions regarding regulations, etc. The questions would be completely catagorical so that a respondent could answer by simply checking which answer applies. Anonymity would be essential in the survey to ensure the respondents are more likely to complete the form and return it. H. Perry volunteered to investigate having the survey translated into Vietnamese. Based on surname, the appropriate forms would then be sent. Dr. Petterson agreed that this would greatly improve the response rate from the Asian crabbing community.

Although not requested to be part of the initial proposal, some thought was given to creating a mail survey specific to processors and dealers. This work would be beyond the agreed project and would strictly be a contribution by IAI to the TTF. The survey would be a brief survey similar to

the harvesters mailing but would address issues and questions specific to processors and dealers. Details of the survey and the extent of the mailing must still be worked out with IAI.

Phone Interview

Dr. Petterson indicated that much of the detailed information beyond the mail survey's ability to elicit would be collected through phone interviews. This instrument will be addressed and drafted after the mail survey. This effort would probably benefit from a future conference call. Questions specific to regulation issues and general concerns would be highlighted using the phone protocol. Similarly, a separate list provided by the respective states of "key informants" would provide still more information. The key informants would be a handful of individuals that work regularly with the states and would be approached by the TTF members personally to ensure cooperation in the anonymous interview. These individuals would be instructed prior to the call that they would be given total freedom to say what is on their mind regarding their fishery.

Deadlines

Several items must be provided by the TTF to IAI to insure successful completion of the profile. Petterson requested that each state provide their harvesters' mailing and phone list to the IAI office in an ASCII format by **January 21**. These lists will allow the IAI staff to determine the number of surveys that must be sent to adequately sample each state's fishermen. In particular, Louisiana and Florida will require a greater number of surveys than the other three states. The sooner these lists are received the sooner a research design can be completed.

A copy of the cover letter from the Louisiana 1997 and 1998 survey was requested by IAI. Considering the high return rate V. Guillory indicated from the survey, their cover letter will provide a good model from which to start.

It was suggested that the mail survey cover letter be mailed on state letterhead from the IAI office. This will require the IJF office at GSMFC to make a formal request of the state directors.

Dr. Petterson also requested a copy of W. Keithly's paper from the Baltimore symposium.

All representatives were reminded to begin thinking about their list of "key informants" so that we can be ready when the need arises.

There being no further business, the conference call adjourned at 4:00 p.m. CST.

Vince Guillory

Blue Crab Technical Task Force (TTF)

MINUTES

May 27-30, 1998

Marathon, Florida

Chairman Vince Guillory called the meeting to order at 9:15 a.m. on Tuesday, May 27, 1998. The following members and others were present:

Members

Vince Guillory, *Chairman*, LDWF, Baton Rouge, LA

Ed Holder, Outdoor Editor, Groves, TX

Traci Floyd, MDMR, Biloxi, MS

Charles Moss, *proxy for E. McCulla*, Lake Jackson, TX

Harriet Perry, GCRL, Ocean Springs, MS

Phil Steele, FDEP/FMRI, 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

P. Steele moved to adopt the agenda as presented. H. Perry seconded the motion which passed without objection.

Adoption of Minutes

The minutes of the March 16, 1998 meeting in Destin, Florida, were reviewed. H. Perry provided an addition to Mississippi's report. T. Wagner had minor deletion to the list of "to do" items for the FMP. P. Steele then moved to approve the minutes as revised. T. Wagner seconded the motion, and the minutes were approved as corrected.

Membership

In his letter dated April 13, 1998, the commercial representative for the Blue Crab TTF, Edward F. McCulla, appointed Charles Moss his permanent voting proxy (see attachment 1).

Revision Progress

Stock Assessment - B. Pellegrin was unable to attend the meeting due to familial obligations. The group agreed to convene a stock assessment work group meeting in mid-July at the Gulf Coast Research Laboratory in Ocean Springs. At this session, B. Pellegrin, H. Perry, V. Guillory, and P. Steele will work out details required to complete the stock assessment of blue crab in the northern Gulf of Mexico.

Sociological Section - S. VanderKooy reported that the blue crab sociological survey was mailed the previous week. The mailing proved to be quite a task and consisted of 21,305 pieces being folded, posted, and mailed. Approximately 2,513 surveys were mailed to Louisiana, 562 to Texas, 710 to Florida, 177 to Alabama, and 113 to Mississippi. Permission was granted by all state directors to use individual state letterhead and signatures for the cover letter. Follow up postcards will be mailed next week. Dr. Petterson will report on progress at the next meeting.

Economic Section - W. Keithly had indicated that he would be at the meeting but was not present. Chairman Guillory will contact him for a progress report.

Revised Section Review

T. Wagner reported that the summary of regulations by state were received for incorporation into section 5; however, the information is inconsistent, and he is not sure how to proceed. There may also be a confidentiality problem. The group agreed that a summarized discussion would be useful. Other comments for section 5 included:

- Recreational regulations are not complete. State representatives will send in regulations for incorporation. Also denote regulations as either recreational or commercial.
- Under each agency description, there is a blanket statement how that agency may affect blue crab. The group agreed to remove the repetitive verbiage and place a general statement in the introductory paragraph of the section.
- Add the HACCP regulations under the Food and Drug Administration. Refer the reader to the correct agency. Tom Wagner will contact Tom Herrington (228-688-7941) for this information.
- Page 5-4, section 5.1.2. The transport of blue crab and blue crab products **are** subject to international agreement (customs, NAFTA). Check with the DOC, NOAA. H. Perry has the phone number for T. Wagner to get this information.
- Page 5-5, section 5.1.3.7. Remove the second sentence of the first paragraph.
- Table 5.2, state representatives should double-check for omissions. Louisiana possession limits (recreational), change to "yes*." Add trap identification regulations for both commercial and recreational.
- Page 5-12, section 5.2.1.7. The first sentence is incorrect. Florida's laws and regulations **are** uniform.
- Page 5-12 & 13, section 5.2.1.7.3. Add a summary of the peeler crab restrictions.
- Page 5-13, section 5.2.2. T. Wagner will check with S. Heath.
- State CZM Programs will be detailed within the habitat section. Refer the reader to the habitat section as appropriate.

- Page 5-21, section 5.2.4.3.1. Change “commission” to “LWFC.”
- Page 5-22, section 5.2.4.3.2. The moratorium is ending. Change to past tense.
- Page 5-22, section 5.2.4.7.1, fourth paragraph, third sentence. Rewrite “A person possessing more than 20% undersize crabs shall be subjected to stricter penalties than those under 20%:...).
- Page 5-27. Use a number sequence rather than bullets.
- Page 5-30, section 5.2.5.7.4. Closed areas and seasons may now include all waters in the city of Port Arthur.

V. Guillory provided sections 9, 10, and 11 on disk. Using the in focus computer projection unit, the outline for section 9, management considerations, was revised. Section 10, management recommendations, was reviewed, thoroughly discussed and debated, and revised. Section 11, regional research priorities and data requirements, was also revised. Revised drafts of sections 3 and 6 were distributed for review and comment. All representatives will send comments directly to the section authors for incorporation before the next meeting.

Next Meeting

The next meeting of the Blue Crab TTF was tentatively scheduled for August 1998 in Lafayette or New Orleans, Louisiana. All authors will bring sections on disk for onsite editing using the in focus computer projection unit.

Other Business

The group expressed concern over the lack of progress on the economics section. V. Guillory agreed to contact W. Keithly and relay those concerns. The group was also concerned that the Alabama representative, S. Heath, was unable to attend.

A field trip to Looe Key was conducted from 8:00 a.m. until 2:00 p.m., Saturday, May 30, 1998.

There being no further business, the meeting adjourned Saturday, May 30, 1998, at 2:00 p.m.

**FIN/ACCSP Compatibility Work Group
Meeting Summary
May 27 -28, 1998
Tampa, Florida**

The meeting was called to order at 8:45 a.m and the following people were present:

Lisa Kline, ASMFC, Washington, DC
Ron Lukens, GSMFC, Ocean Springs, MS
Nick Nicholson, GCRD, Brunswick, GA
Joe Shepard, LDWF, Baton Rouge, LA
Dee Lupton, NCDMR, Morehead City, NC
Bruce Joule, MDMR, West Boothbay Harbor, ME
Mark Alexander, CDEP, Old Lyme, CT
Bob Beal, ASMFC, Washington, DC
Connie Young-Dvbovsky, ASMFC, Washington DC
Dave Donaldson, GSMFC, Ocean Springs, MS

D. Donaldson stated that the main topic of discussion will be to review the Fisheries Information Network (FIN) program design document in respects to compatibility/comparability with ACCSP. The group needs to examine the similarities and differences in the catch and effort, discards, confidentiality, data management, and other components of the programs. The group reviewed the two program design documents for the FIN and ACCSP and the revised FIN document represents the administrative record for the meeting. During the discussions, the group identified several areas that needed to be addressed by the FIN Committee or other appropriate bodies. The recommendations included:

- Development of a law enforcement policy statement and confidentiality issue will be addressed by the GSMFC Law Enforcement Committee in October
- The issue of standard forms and codes needs to be addressed by either an existing or an ad hoc work group
- A comparison of the Operations Plan for FIN and ACCSP needs to be conducted
- The FIN Committee needs to discuss the need for policies at the September meeting
- The FIN Committee needs to discuss the issue of aquaculture at the September meeting

There being no further business, the meeting was adjourned at 11:00 a.m.

PROGRAM DESIGN DOCUMENT

FOR THE

FISHERIES
INFORMATION NETWORK IN
THE SOUTHEAST REGION
(FIN)

JUNE 1998

Number 55

TABLE OF CONTENTS

I.	OVERVIEW	1
	A. Program Organization	2
	B. Program Structure	3
II.	POLICES AND GOALS	3
	A. Survey Methodologies Changes Policy Statement	3
	B. Confidentiality Policy Statement	3
III.	STANDARDS	4
IV.	STANDARD DEFINITIONS	5
V.	CATCH AND EFFORT DATA COLLECTION PROGRAMS	5
	A. Commercial Catch and Effort Data Collection Program	5
	B. Recreational Catch and Effort Data Collection Program	7
	Sampling Program for Private/Rental and Shore Modes of Fishing	7
	Sampling Program for For-Hire Modes of Fishing	8
VI.	BIOLOGICAL SAMPLING PROGRAM	11
VII.	SOCIAL AND ECONOMIC DATA COLLECTION PROGRAM	13
	A. Commercial Social and Economic Data Collection Activities	13
	B. Recreational Social and Economic Data Collection Activities	14
VIII.	BYCATCH MONITORING PROGRAM	14
IX.	QUOTA MONITORING PROGRAM	15
X.	COMPILATION OF METADATA	15
XI.	VESSEL REGISTRATION SYSTEM	18
XII.	DATA MANAGEMENT SYSTEM	19
XIII.	OUTREACH PROGRAM	19

I. OVERVIEW

The Fisheries Information Network (FIN), comprised of 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 and estuarine commercial and recreational fisheries of the Southeast Region.¹

The need for a comprehensive and cooperative data collection program has never been greater because of the magnitude of fisheries and the differing roles and responsibilities of the agencies involved. Many southeastern stocks are stressed, due to excessive harvest and changes in essential habitat. The information needed by management agencies require data that are statistically sound, long-term in scope, timely, and comprehensive. Given the limited resources of management agencies to provide this information, a cooperative partnership between state and federal agencies is essential to accomplish these goals.

Efforts by state and federal agencies to develop a cooperative program for the collection and management of commercial and recreational fishery data in the Region began in the mid to late 1980s. In 1992, the National Marine Fisheries Service formally proposed a planning activity to establish the RecFIN(SE). Planning was conducted by a multi-agency Plan Development Team through October 1992 at which time the program partners approved a Memorandum of Understanding (MOU) which established clear intent to implement the RecFIN(SE). Upon signing the MOU, a RecFIN(SE) Committee was established.

In 1994, the NMFS initiated a formal process to develop a cooperative state-federal program to collect and manage commercial fishery statistics in the Region. Due to previous work and NMFS action, the Southeast Cooperative Statistics Committee (SCSC) developed a MOU and a draft framework plan for the ComFIN. During the development of the ComFIN MOU, the SCSC, in conjunction with the RecFIN(SE) Committee, decided to combine the MOU to incorporate the RecFIN(SE). The MOU creates the FIN which is composed of both the ComFIN and RecFIN(SE). The MOU, signed in 1995, confirmed the intent of the signatory agencies to participate in implementing the ComFIN and RecFIN(SE).

This document provides detailed information on the program standards and policies, reporting requirements and sampling programs, quality control and assurance documentation, and processes necessary for program adjustments and modification. Program requirements should be followed by all participating agencies as fully as possible to ensure effective implementation of the ComFIN/RecFIN(SE) data collection and data management systems. The program is built on the cooperation between the states and federal agencies mandated to manage the fisheries resources. The program is similar to the Atlantic Coast Cooperative Statistics Program (ACCSP), which is being developed for the states along the Atlantic coast. The FIN will be coordinated with the Pacific

¹The Southeast Region (the Region) includes Alabama, Florida, Georgia, Louisiana, Mississippi, North Carolina, Puerto Rico, South Carolina, Texas, and the U.S. Virgin Islands.

Fisheries Information Network (PacFIN), and the Pacific Recreational Fisheries Information Network (Pacific RecFIN) and the ACCSP to form a national program.

A. Program Organization

The organizational structure consists of the FIN Committee, the ComFIN and RecFIN(SE) Committees, three geographic subcommittees (Caribbean, Gulf, and South Atlantic), standing and ad hoc subcommittees, technical work groups, and administrative support. Figure 1 outlines the organizational structure of FIN.

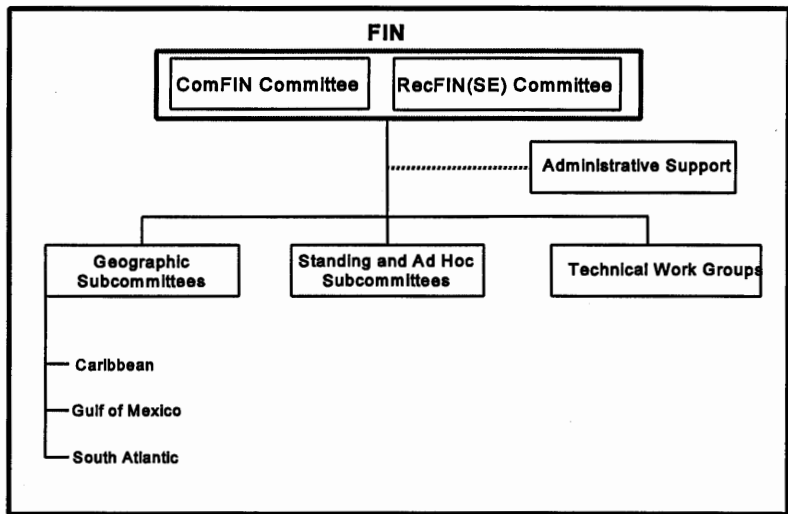


Figure 1. Organizational structure of the FIN.

Committees

The ComFIN and RecFIN(SE) Committees consist of the signatories to the MOU or their designees, and are responsible for planning, managing, and evaluating the program. Agencies represented by signatories to the MOU are the National Marine Fisheries Service, U.S. Fish and Wildlife Service, National Park Service, Alabama Department of Conservation and Natural Resources, Florida Department of Environmental Protection, Georgia Department of Natural Resources, Louisiana Department of Wildlife and Fisheries, Mississippi Department of Marine Resources, North Carolina Department of Environment and Natural Resources, Puerto Rico Department of Natural and Environmental Resources, South Carolina Department of Natural Resources, Texas Parks and Wildlife Department, U.S. Virgin Islands Department of Planning and Natural Resources, Caribbean Fishery Management Council, Gulf of Mexico Fishery Management Council, South Atlantic Fishery Management Council, Atlantic States Marine Fisheries Commission, and Gulf States Marine Fisheries Commission.

Subcommittees

The ComFIN and RecFIN(SE) Committees are divided into three standing subcommittees representing the major geographical areas of the Region: Caribbean, Gulf, and South Atlantic. These subcommittees, comprised of technical personnel from state and federal fisheries agencies,

are responsible for making recommendations to the Committee on the needs of these areas.

Standing and ad hoc subcommittees may be established as needed by the FIN, ComFIN, and RecFIN(SE) Committees to formulate administrative policies, to serve as nominating committees for the FIN, ComFIN, and RecFIN(SE) chair and other positions, or to address other issues as decided by the FIN, ComFIN, and RecFIN(SE) Committees. Members of these subcommittees will be members of ComFIN and RecFIN(SE) Committees.

Work Groups

Technical work groups are established as needed by the ComFIN and RecFIN(SE) Committees to carry out tasks on specific technical issues. Work groups are appropriate for accomplishing many of the specific ComFIN and RecFIN(SE) objectives. Each group is comprised of persons selected by the Committees for their expertise on the specific subject to be addressed and may include members of the ComFIN and RecFIN(SE) Committee, as well as nonmembers. Work groups are charged in writing by the Committees with specific tasks and may be disbanded by the Committees when that task is completed. "Standing" work groups may also be authorized by the Committees and be assigned a series of related tasks over a period of time.

The FIN Committee recognizes the importance of fishermen and industry input into the development of FIN. Because of this fact, the Committee has established advisory committees to address the importance of stakeholder input, methods used to gather input, and dissemination of information. The Gulf portion of the FIN will use the Gulf States Marine Fisheries Commission (GSMFC) Commercial/Recreational Advisory Panel to address these issues. And the South Atlantic portion of FIN will utilize the ACCSP Fisheries Statistics Advisory Committee to address these issues. These groups are comprised of people from both the commercial and recreational sectors. They will provide input into the development of the FIN.

Coordination and administrative support of the FIN, ComFIN, and RecFIN(SE) is accomplished through the GSMFC. All partners will be consulted concerning administrative and coordination issues.

B. Program Structure

The two major components of the FIN are the data collection and data management system. The data collection component is divided into commercial and recreational modules. Although there are two distinctive components, the modules of both programs are similar. The components of the data collection system are catch and effort data. Biological data, social and economic data, discard and protected species interaction data, and quota monitoring. All the information collected under FIN will be integrated and available through the FIN data management system. This system will allow access to the data by fisheries managers, fishermen, scientists, the fishing industry and other interested parties according to confidentiality policies and protocols.

II. POLICIES AND GOALS

A. Benchmarking Policy

New methods should be benchmarked before changing methods of surveys to ensure that the methodologies will remain consistent over the years of the survey. The temporal and spatial coverage will be determined on a case by case basis.

B. Confidentiality Policy Statement

The preferred alternative and long-term goal of the FIN for disclosure of or access to confidential fishery statistics that an authorized user is any person, that is employed by or affiliated with (i.e., Regional Fishery Management Council members, and contractors/consultants employed by FIN partners) a FIN partner and has been designated by the respective partner to require confidential data as a means to fulfill their job and their job is related to fisheries management and conservation. States that are currently operating under this scenario will continue to do so without having to make changes to present laws or memoranda of understanding. Confidentiality policies and protocols adopted by the FIN must be consistent with state and federal statutes.

Only those data or information that could identify a person or business are considered confidential. Certain data elements, such as names, social security numbers, boat registration numbers, among others, are inherently confidential, since they identify individuals or businesses. Other data elements, such as number of trips or landings, may be confidential and must be considered on a case-by-case basis. Confidential information cannot be disclosed to the public. Such information can only be released to the public in aggregate form, such that the identity of the submitters cannot be determined either from the present release of the data or in combination with other releases. Although a commonly used criterion for release of data is when three or more submitter have reported a species, other criteria may be necessary to ensure data confidentiality. Access to confidential data by State and Federal conservation and management law enforcement personnel is authorized when the data are used only to corroborate or substantiate an investigation. Care should be taken in court cases to prevent the data from becoming public. All authorized users must consent to comply with state and federal non-disclosure policies and written statements. Confidential data can be disclosed to or accessed by authorized user.

The states of Louisiana, Mississippi, and Alabama, GSMFC and the NMFS have signed a Memorandum of Agreement (MOA) which allows the signatories to share confidential data. A request from any agency, organization, or individual not signatory to the MOA must be referred back to the state of data origin. It was also agreed that certain data in aggregate form could be disseminated upon request, because those data would not identify any individual.

Each agency will designate a position that is identified as the contact for that agency for data transfers or questions regarding sharing of data. A common list of certified confidential agents will be compiled, distributed to all appropriate state and federal personnel, and updated on a regular basis to assure that new personnel are added and those who quit or are terminated are deleted.

The following benchmarks need to be achieved once the FIN is fully on-line (partners start collection and compiling trip level data), and should be developed as quickly as possible.

- ▶ Procedures need to be set whereby it is ensured that the data is accessed by authorized users only.
- ▶ Ensure appropriate penalties are developed and fully enforced on individuals and/or agencies who disclose confidential data to non-authorized persons.
- ▶ Appropriate actions are developed to ensure data are not used as the primary evidence to identify illegal fishing activities (this does not include reporting violations).

Law Enforcement Policy Statement

WILL BE DRAFTED BY THE GSMFC LAW ENFORCEMENT COMMITTEE

III. STANDARDS

It has been recognized that the majority of the participating agencies will require regulatory adjustments to fully implement ComFIN and RecFIN(SE) as outlined in the MOU and Framework Plan. Full implementation may take a considerable amount of time and effort. Therefore, FIN standards have been developed to provide some guidance:

All partners will continue cooperative planning to improve the collection of commercial and recreational fisheries statistics.

The FIN will collect data on all living marine resources, including finfish, crustaceans, shellfish, live rock and corals, marine mammal and endangered species, and internationally managed species.

All partners will implement the FIN data collection and data management system within their jurisdictions, to the best of their ability.

The FIN partners must collect and submit information on marine resources landed in their jurisdiction regardless of where they were caught.

Public advice and input will be considered on all aspects of the FIN, including program modifications and changes.

The partners will identify needed and available fiscal resources, and will develop sources of fiscal resources, to achieve the FIN Program Design.

The FIN will distribute Program Design information to cooperators, stakeholders, partners, affected fishermen and other interested parties.

The FIN will conduct internal reviews on an annual basis and an external peer review at least

every five years of operation to evaluate the FIN's success in meeting the needs of Southeastern United States fisheries managers and the public.

The FIN will coordinate, integrate, and augment, as appropriate, data collection efforts to meet FIN requirements.

All FIN data collection programs will develop procedures for verification of self-reported data.

The FIN will evaluate and utilize, where possible, innovative and cost-effective data collection and data management technologies, including automation.

The FIN will continue to provide input into long-term national planning to promote consistency and compatibility among regional programs over time. The FIN will also pursue long-term funding for continuation and expansion of all existing coastwide, and ultimately, a national statistics system.

The FIN will develop an annual Operations Plan including the tasks for monitoring, reviewing, and implementing ComFIN and RecFIN(SE) programs.

All partners will implement quality control and assurance procedures as documented in the FIN Standard Operating Procedures (SOP) Manual.

IV. STANDARD DEFINITIONS

Catch	Aquatic organisms temporarily or permanently removed from a population.
Discarded Catch	The portion of the catch that is not retained, including incidental take of protected species, dead or alive.
Immediate Use Catch	Use of the retained catch for food or bait before the end of the trip.
Landed Catch	The total number or weight (or other measure) of all marine resources (fish, invertebrates, others) captured, brought to shore and retained at the end of a trip.
Retained Catch	The number or weight of marine resources caught and kept for immediate use (bait, food) or for landing.
Commercial fisherman	Any person who sells, barter, or receives compensation for any or all of their catch.

Fish Guide	A person who is compensated for accompanying or transporting a recreational fisherman.
Fisherman	Any person who attempts to catch aquatic organisms.
Harvest	Aquatic organisms permanently removed from a population.
Landings	Aquatic organisms brought to land from water.
Recreational fisherman	Any person who catches or attempts to catch aquatic organisms for personal disposition, except for sale.

V. CATCH AND EFFORT DATA COLLECTION PROGRAMS

A. Commercial Catch and Effort Data Collection Program

The commercial data collection program will be a mandatory, trip-based system with all fishermen and dealers required to report standardized data elements. All minimum standard data elements listed in Table 1 must be collected by all partners conducting commercial data collection programs. The methodology of data collection (trip ticket versus sampling) should be included with the data prior to downloading to the data management system. All catch and effort data should be collected at the trip-level with resolution for each gear and area combination. For example, landings and effort data should be recorded separately each time the fisherman changes gear or fishing area within a trip. Under this program, the dealer is required to submit a completed trip ticket. However, there has to be considerable interaction between dealers and fishermen to ensure accuracy and completeness of the data. It is important that both fishermen and dealers be responsible for accurate data collection and can be held accountable for not reporting or inaccurate reporting.

The ComFIN will utilize precoded reporting forms to the best of each program partners ability. Any marine fishery products landed in any state must be reported by a dealer or a marine resource harvester acting as a dealer in that state. Any marine resource harvester who sells, consigns, transfers, or barter marine fishery products to anyone other than a dealer would himself be acting as a dealer and would therefore be responsible for reporting as a dealer. Partners should attempt to follow the standard ComFIN forms to provide for consistency among agencies. These forms allow for reporting of minimum standard data elements in a header format, but allow flexibility in the collection and form design for data elements not required by the ComFIN. The unique identifier for trip data will be the trip ticket number. Partners need to develop methods for quantifying the amount of trips where there was no catch. Dealers are required to submit monthly negative (no activity) reports in the states where they are licensed. Each ComFIN partner should develop a process to verify the accuracy of submitted information using one or a combination of methods. All catch and effort surveys for commercial fisheries will follow the ComFIN quality control and assurance documentation.

Table 1. Minimum data elements for the ComFIN trip ticket program.

	DATA ELEMENT	DESCRIPTION
1	Trip date	The dd/mm/yy that the trip started. A trip is defined as the time the vessel left the dock to the point that the product was transferred
2	Form type/version #	Version identification number for the ComFIN reporting form
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
4	Vessel ID	Unique vessel identifier (i.e Coast Guard, state registration number, etc.). These identifiers must be trackable through time and space
5	Participant ID	Unique participant identifier, where applicable by regulation, (i.e SSN, license #, etc.) These identifiers must be trackable through time and space
6	Species	Each species is to be identified separately. Use of market or generalized categories is to be avoided within species code fields or variables.
7	Quantity landed	The amount of each marine species that is landed and/or sold.
8	Landing condition	Condition landed (whole, gutted, headed, etc.)
9	Quantity units	(Pounds, kilograms, etc.)
10	Market size range	Actual size range of species landed
11	Ex-vessel value or Ex-vessel price	The total dollar value for each species that is landed or sold The price per unit weight paid for each species that is landed or sold
12	County (minimum) or port (optional) landed	This element provides the location within a state where the product was transferred
13	State landed	This element provides the state where the product was landed or unloaded.
14	Dealer ID	This element is an identifier for the dealer at the point of each transaction. In the case of multiply dealers, the landings would be reported separately for each dealer.
15	Unloading date	Date the landed species was transferred to a dealer.
16	Market category	This element specifies any market or grade categories that affect price, usually size related.
17	Gear(s)	The type(s) of gear used to catch the landed species
18	Area fished	This element 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.
19	Disposition	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.)
20	Quantity of gear	The amount of gear employed
21	Days at sea	Days from the start of the trip to the return to the dock
22	Number of crew	Number of crew on each trip, including captain.
23	Fishing time	Total amount of time (usually in hrs) that gear was in the water and/or amount of search time for each trip
24	Number of sets	Total number of sets or tows of gear during a trip

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"> 1. Port Sampling Programs 2. At-Sea Observer Programs 3. Law Enforcement Presence <ul style="list-style-type: none"> ▶ overflights ▶ boarding and summons reports ▶ vessel tracking system ▶ audits and inspections ▶ violations hotlines ▶ customs data ▶ consistency of penalties between states 4. Distribution of periodic data summaries to fishermen for self-verification 	<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"> ▶ 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. Auditors must be granted official access to these additional sources of information as needed to perform such audits. 	Should be used only on an as-needed basis.
Other Methods	<ul style="list-style-type: none"> ▶ Random additional logbooks ▶ Independent reports from fishermen and dealers of certain data elements ▶ Fishermen permit qualification ▶ Quota monitoring activities ▶ Any combination of the above 	Should be used only on an as-needed basis.

B. Recreational Catch and Effort Data Collection Program

Sampling Program for Private/Rental and Shore Modes of Fishing

Private and rental boats will be maintained as one strata, however, surveys for this mode should be designed to allow post-stratification of rental boats. All shore fishing should be sampled as one strata, with collection of information at the individual mode level to allow for post-stratification for piers, docks, other man-made shore, and natural shore modes of fishing. All minimum standard data elements listed in Table 4 must be collected by all partners conducting recreational data collection programs, unless otherwise noted. All catch and effort data should be collected at the trip-level with possible resolution for each area fished. Effort data for the private/rental and shore modes of fishing should be collected through a telephone survey with random sampling of households. Specific data elements to be collected through the telephone survey are listed in Table 4. Catch data for the private/rental and shore modes of fishing should be collected through an access-site intercept survey. States should increase their involvement in conducting this survey. Specific data elements to be collected through the access-site intercept survey are listed in Table 4. The unique identifier for trip data will be the date of return, sampler number, record number, and individual identifier. All catch and effort surveys for recreational fisheries will follow the RecFIN(SE) quality control and quality assurance documentation. The RecFIN(SE) will conduct research and evaluation studies to expand and improve the estimates of recreational catch and effort collected through the telephone and access-site intercept surveys. All partners should update the list of public rental and shore access sites and should expand these lists to include private access sites. The RecFIN(SE) will evaluate the need for identification of all recreational fishing vessels including private/rental vessels and develop methods for identification, if needed.

Sampling Program for For-Hire Modes of Fishing

All for-hire vessel surveys should be designed to allow identification and representative sampling of charter, head, and guide boat trips for the purposes of post-stratification to ensure standardized comparisons among states. All minimum standard data elements listed in Table 4 must be collected by all program partners conducting recreational data collection programs, unless otherwise noted. All catch and effort data should be collected at the trip level with possible resolution for each area fished. The unique identifier for trip data will be the date of return, sampler number, record number, and individual identifier. All catch and effort surveys for for-hire fisheries will follow the RecFIN(SE) quality control and quality assurance documentation. The RecFIN(SE) is currently conducting an evaluation study between three data collection methods to determine which method is the most accurate and reliable for collecting for-hire catch and effort data: 1) a telephone survey using the for-hire vessel sampling frames to collect effort data; 2) the Marine Recreational Fisheries Statistics Survey (MRFSS) effort estimates, and 3) logbook panel survey reporting to collect both catch and effort data; . The site intercept survey for methods number 1 and 2 will be conducted using the current MRFSS methods. Upon completion of this study, the best method for sampling the for-hire fisheries will be implemented.

Table 4. Minimum data elements for recreational data collection. (I = information collected

through the intercept survey, T = information collected through the telephone survey, B = information collected through both the intercept and telephone surveys).

DATA ELEMENT	DESCRIPTION / CRITERIA	WHERE COLLECTED
Date of Return	Date the trip ended.	B
Sampler Number	Unique sample number for intercept surveys. Needed for quality control and to provide a unique code to each trip.	B
Record Number	Unique sample code for each angler trip within a day and interviewing site.	B
Individual Identifier	An identifier unique to an individual (i.e. license number), which is trackable through time and space. This data element should be collected only on those trips where the angler intends to sell a portion of the landings.	B
Reporting Form Series Number	<i>Individual number for each reporting form, to be assigned by the collecting agency (i.e. trip ticket number). This data element may be blank in the dual reporting system.</i>	B
Form Type/Version Number	<i>Version identification number.</i>	B
Species	The genus and species for each species of marine resources landed, sold, discarded, etc. Each species is to be identified separately.	I
Quantity Kept	The amount, in numbers, of each marine species kept (consumed, used as bait, filleted, etc.).	I
Disposition	Fate of the catch (i.e. discards, bait, industrial use, personal consumption, marine mammal interactions, etc.). Disposition of discards should be recorded (i.e. regulatory versus other discards, dead or alive).	I
Size Category	General indication of the life stage of species caught (i.e. snapper bluefish versus adult bluefish).	B
State Landed	The state where the angler returned from a fishing trip.	B
County Landed	The county where the angler returned from a fishing trip.	B
Gear	The type of gear used to catch the landed species.	I
Target Species or Species Group (Primary)	The primary species or species group that the trip was targeted to catch.	B
Fishing Mode	The fishing access mode (i.e. private/rental boat, shore mode, for-hire mode).	B
Primary Area of Catch	The location where the majority of the catch was made. The distance from shore where the catch occurred [inshore, inland (0-3 miles on Atlantic coast, 0-9 miles on Gulf coast), EEZ (3-200 miles on Atlantic coast, 9-200 miles on Gulf coast), >200 miles] is embedded in this code.	I
State of Residence	The permanent residence (<i>state</i>) of the angler.	B
County of Residence	The permanent residence (<i>county</i>) of the angler.	B
Number of Trips (Avidity)	The number of trips by mode of fishing.	B
Fishing Party Size	The number of fishermen in the party.	I
Trip Duration	The time the trip took, from shore to shore (boat) or time spent onshore fishing.	I
Fishing Time	The amount of time (hours) that the gear was in the water fishing.	I

Lengths/Weights	Lengths, and if possible, weights of each species for the various components of the catch.	I
Units of Measurement	Units of girth length (i.e., feet, meters, etc.).	I
Length Type	Type of length measurement (standard, total, etc).	I
Additional trip level data needed from recreational fisheries for stock assessments on a periodic and species-specific basis. These data elements are not required as minimum standard data elements under the FIN.		
Data Element	Description / Criteria	Where Collected
Quantity of Gear	The amount of gear employed on trips (i.e. number of lines, number of hooks, etc.).	I
Configuration of Gear	Characteristics of the individual gear being employed (i.e. line strength, hook type, hook size, etc.).	I
Fishing Power	Data elements such as boat length, passenger capacity/party size, technological capabilities (i.e. LORAN, GPS, etc.) and speed. These data elements may affect catch rates and may be needed for stratification/estimation.	I
Bait Type / Hook Type	The type of hook and bait used, which can affect release mortality.	I
Recreational fisheries data needed for certain ongoing studies, but not required under the RecFIN(SE) recreational data collection program.		
Data Element	Description / Criteria	Where Collected
Residence (zip code)	The residence of the angler in all modes, as well as the residence of charter and head boat owner/operators.	B
Party link	Used to link all interviews within a party.	I
Number of Contributors to the Catch	Used to calculate catch distributions.	I
Vessel Identifier	Unique vessel identifier (Coast Guard or state registration number); needed for some modes and methods, especially charter and head boats, for effort estimation.	B
Primary Area Fished	The location where the majority of fishing (effort) took place.	I
Site Landed	This data element provides the fishing access point within a state where an angler fished or returned from a fishing trip.	I
Secondary Target Species or Species Group	The secondary species or species group that the trip was targeted to catch.	I
Area of Catch by Species Group	The location where the majority of catch took place.	Neither, on a routine basis only.

Table 5. FIN recreational research and evaluation activities to expand and improve recreational data collection in the Southeast Region. Research activities and pilot/evaluation studies are listed in order of priority.

Research Activities	Overview of Activities
Implement appropriate survey methodologies to monitor for-hire fishery	<p>Identify and evaluate current methodologies to survey charter and head boat fisheries</p> <p>Identify and test alternative methodologies, and modify approaches as appropriate</p> <p>Implement the best methodology for sampling the for-hire fishery</p>
Establish a method to increase the precision of estimates for priority species	<p>Develop a list of prioritized species, by sub-region.</p> <p>Determine target precision levels for priority species, to included at least all species covered by all management plans.</p> <p>Evaluate methods to achieve desired target precision levels through enhancement of the MRFSS or via special studies</p>
Develop integrated licensing/permit database that is suitable to use as a sampling frame	<p>Outline licensing structure of each partner</p> <p>Develop criteria to ensure that licenses can be used as a regional sampling frame</p> <p>Establish or modify licenses that include the identified criteria</p> <p>Conduct a survey comparing the license frame versus the MRFSS methodology in a region</p>
Determine catch rates and species composition from private access groups	<p>Determine the distribution of private access points by state</p> <p>Evaluate the North Carolina study and other pertinent studies regarding private access groups</p> <p>Develop an acceptable methodology for determining catch rates and species composition from private access groups</p>
Determine catch rates and species composition from night fishing	<p>Evaluate existing information and/or conduct special studies to determine the distribution and magnitude of night fishing by state</p> <p>Develop an acceptable methodology for determining catch rates and species composition for night fishing</p>

<p>Collect appropriate information from fishing tournaments, and integrate with other MRF data</p>	<p>Identify ongoing tournaments</p> <p>Identify and recommend data requirements and consistent methodologies for tournament sampling</p>
<p>Determine catch and effort of shellfish and finfish harvested using non-hook-and-line methods</p>	<p>Identify non-hook-and-line recreational fisheries and related sampling programs</p> <p>Develop and/or modify methods for monitoring non-hook-and-line fisheries</p>
<p>Develop funding initiatives to establish and enhance MRF surveys in the Southeast Region</p>	<p>Support the establishment of long-term, comprehensive MRF surveys in Puerto Rico and the Virgin Islands</p>
<p>Integrate MRF data collection efforts to meet RecFIN(SE) requirements</p>	<p>Evaluate the compatibility of information resulting from the Texas survey with the information resulting from other MRF data collection programs</p>
<p>Implement alternative methods and/or modify existing methods for intercept survey sample selection procedures</p>	<p>Identify and evaluate potential improvements to intercept survey site selection procedures</p> <p>Select the preferred approach to improving the intercept survey site selection procedures</p> <p>Conduct and evaluate a pilot study comparing the preferred approach with current MRFSS methods</p>
<p>Determine the extent of non-consumptive recreational activities</p>	<p>Identify non-consumptive recreational activities and related sampling programs</p> <p>Develop and/or modify methods for monitoring non-consumptive recreational activities</p>

VI. BIOLOGICAL SAMPLING PROGRAM

The FIN will use and expand existing systems to collect biological data on commercial and recreational fisheries, while utilizing regional panels to determine assessment needs of both state and federal partners. The FIN will utilize a formalized process for the development of species priorities and target sampling levels. The objective of the process is to determine the species that will be targeted for size frequency and bioprofile sampling. The procedures are:

- Each partner will coordinate with his/her agency to identify species of priority (that will need stock assessments), the type and amount of data needed, and the geographic area over which the data need to be collected. This information will be provided to the GSMFC. Staff will compile the information and provide it to the Committee at the September RecFIN(SE) meeting.
- Each year, during the fall FIN meeting, the Committee will review progress regarding current year's data collection efforts.
- Based on the identified needs of the partners, a data collection plan will be developed, which will contain state, interstate, and federal priority species, type and amount of data needed, and the geographic distribution of the proposed data collection.
- That plan will provide guidance to the states, NMFS, and FWS for the development of funding mechanisms that are implemented to provide funding support for collecting the data.
- During the spring FIN meeting, the Committee will conduct an evaluation of the prior year's effort, including:
 - a. evaluation of adherence to prior year's plan
 - b. final review of prior year's data
- Appropriate FIN personnel will participate in stock assessment workshops for fisheries that have a significant recreational component.

All commercial and recreational data collection programs should collect the standard data elements listed in Table 6, based on the priorities and target levels determined by the Committees. Base level biological data for recreational species should be collected through the site intercept survey and additional samples should be coordinated with the survey. Base level biological data for commercial species should be collected through the port sampling program.

Table 6. Standard data elements of biological sampling.

	DATA ELEMENT	DESCRIPTION
1	Trip Ticket Number	Trip Ticket Number If Available
2	Record Number	Annual Sequential Interview Number (Link to Fishery Data Collected)
3	Record Type	Random or Bioprofile
4	Sample Date	Month / Day / Year
5	Sampler	Port Agent Code
6	State (Landing)	NMFS State Code
7	County (Landing)	NMFS County Code
8	Zip Code (Landing)	7 Digit Zip
9	State (Sampled)	NMFS State Code
10	County (Sampled)	NMFS County Code
11	Zip (Sampled)	7 Digit Zip
12	Sampling Location	Dealer Number
13	Gear Code	NMFS Gear Code
14	Area Fished	NMFS Area Code
15	Area Code Type	Type of Area Descriptor
16	Species Code	10 Digit NODC Code
17	Landing Condition	Condition Landed (Whole, Guted, Headed, Etc.)
18	Market Size Range	Actual Size Range
19	Number Measured	Number of Fish Measured
20	Length	Length of Individual Fish
21	Length Units	(Total Length, Standard Length, Etc.)
22	Weight	Weight of Individual Fish
23	Weight Units	(Pounds, Kilograms, Etc.)
24	Sex	NMFS Sex Code
25	Age Tag Number	Annual Age Structure Identifier
26	Age Tag Number	Annual Age Structure Identifier (Link to Species Specific Data)
27	Age Structure Type	Otolith, Spine, Scale, Etc.
28	Age Method	
29	Reader 1	
30	Reader 2	
31	Distance to Edge	

32	Marginal Increment	
33	Minimum Age	

VII. SOCIAL AND ECONOMIC DATA COLLECTION PROGRAM

A. Commercial Social and Economic Data Collection Activities

The ComFIN has developed a market module which will collect data concerning value and price of commercial fisheries. The standard data elements that will be collected are listed in Table 7. The Committee has not yet designed a module for the collection of basic social and economic data. This activity will be addressed in the near future.

Table 7. Market Module for Commercial Fisheries.

	DATA ELEMENT	DESCRIPTION
1	Trip Ticket Number	Trip Ticket Number
2	Record Type	Survey or Census
3	Record Number	Annual Sequential Interview Number (Link to Fishery Data Collected)
4	Sample Date	Month / Day / Year
5	Sampler	Port Agent Code
6	State (Landing)	NMFS State Code
7	County (Landing)	NMFS County Code
8	Zip Code (Landing)	7 Digit Zip
9	State (Sampled)	NMFS State Code
10	County (Sampled)	NMFS County Code
11	Zip (Sampled)	7 Digit Zip
12	Sampling Location	Dealer Number
13	Fishery Code	General Type of Fishery/species Group
14	Trip Type	General Gear Type
15	Information Source	Source of Information (Logbook, Survey Etc.)
16	Gear Code	NMFS Gear Code
17	Area Fished	NMFS Area Code
18	Area Code Type	Type of Area Descriptor
19	Species Code	10 Digit NODC Code
20	Landing Condition	Condition Landed (Whole, Guttled, Headed, Etc.)
21	Market Size Range	Actual Size Range (numeric)

22	Market Category	The market category of a particular species (small, medium, large, etc.)
23	Landing Weight	Weight Landed in Market Category
24	Weight Units	(Pounds, Kilograms, Etc.)
25	Price	Price per Weight
26	Value	Value of Landing
27	Origin of Purchase	Person and/or location product was brought (fisherman, processor, seafood dealer, etc.)
28	Date of Purchase	Date when the product was sold.

B. Recreational Social and Economic Data Collection Activities

Specific details regarding the collection of social and economic data from recreational fisheries activities has not been developed. The Social/Economic Work Group is currently working on developing minimum data elements and from that will develop survey methods to collection of those elements. The group will utilize the extensive work that has been conducted by the ACCSP to aid in these tasks.

VIII. BYCATCH MONITORING PROGRAM

The ComFIN and RecFIN(SE) are still in the developmental stages regarding a bycatch monitoring program. The ComFIN Data Collection Work Group met in August 1997 to discuss this issue and developed some basic guidelines regarding bycatch. For the commercial aspects, the group talked about several methods, such as an observer program, fishery-independent sampling, and some type of sampling program which randomly selects vessel to examination of bycatch, for collecting this type of information. For the recreational aspects, the group agreed that a minimum standard data elements including quantity released dead, quantity released alive, and disposition of catch should be collected. It was agreed by the group that the type of method used to collection bycatch information is dependent upon the fishery that is being sampled and collection of bycatch could be implemented by special studies to address specific issues and may not be a long-term sampling program. The ACCSP has done a lot of work regarding the development of a bycatch collection program and ComFIN and RecFIN(SE) will utilize their experiences in the development of their program.

IX. QUOTA MONITORING PROGRAM

The FIN has not yet addressed quota monitoring for commercial and recreational fisheries. This task will be addressed by both the ComFIN and RecFIN(SE) Committee in the near future.

X. COMPILATION OF METADATA

Metadata is defined as information that is necessary to interpret survey data and is more descriptive than analytical ("meta" means transcending). The RecFIN(SE) Biological/Environmental Work Group has worked extensively on the development of criteria for collection of metadata. The information to be included in metadata can be grouped into several major categories which include major environmental events (tropical storms, hurricanes, floods, droughts, oil spills), changes in fishing/boating regulations, procedural changes in survey methods, economic/social conditions and factors (major trends, political events, gas prices, etc.), and others pertinent events. It is envisioned that the metadata will be provided to users whenever they access the data. This will provide the user with possible explanations for inconsistencies in the data. Table 8 outlines the major categories and subcategories of metadata. And Table 9 provides the standard format for collection of metadata.

Table 8. Categories and subcategories of metadata.

METADATA CATEGORIES AND SUBCATEGORIES	DEFINITION
<i>Environmental</i>	<i>Natural and human-caused conditions of water, air, and land attributes which affect marine fishery resources and their users.</i>
Significant Weather Events	Hurricanes, major storms, freezes, long-term drought, El Nino, large-scale floods
Climate Changes	Greenhouse effect
Pollution	Discharge, runoff, treat system failure
Oil/Chemical Spills	Oil, chemical, shipwreck
Disease of Fish	Pfiesteria, etc.
Water Mass Change	Significant changes in Gulf Stream, warm core rings, etc.
Wind Pattern Change	Significant departures from normal seasonal patterns.
Physical Habitat Alteration	Loss/degradation of habitat caused by natural or man-made activities (i.e., dredge/fill, seagrass loss, gear effects).
Land Use Pattern Change	Deforestation, re-forestation, urbanization, etc.
Exotic Species Introductions	Japanese oyster, zebra mussel, Asian clam, aquaculture escapement, etc.
Fish Kills	Significant quantities of dead fish in a defined area with unknown cause.
<i>Statute/Rule Change</i>	<i>State, federal, or local regulations or statutory changes which affect marine fisheries resources and their users.</i>
Size Limits	Increases/decreases in length/weight limits (i.e., minimum, maximum, slot)
Season/Trip Duration	Time periods, days-at-sea, etc.
Gear/Vessel Restrictions	Gear parameters, vessel size, etc.
Licenses/Permits	Imposition of license/permit requirements and fees, new requirements, limited entry, etc.
Quotas	ITQs, overall fishery, geographic, time period, etc.
Area Closures	Spawning, nursery, fishing, etc.
Possession Limits	Creel limits, daily, seasonal, trip, etc.
Reporting Requirements	Any changes in reporting requirements (i.e., voluntary versus mandatory)

Moratoria	Total fisheries closures.
Economic	<i>Data on economic activity that affect fisheries resources and their management. (Most economic factors apply to both commercial and recreational fisheries)</i>
Ex-vessel Price	Price received by fishermen for their products, if not collected as primary data under the FIN
Fixed/Variable Costs	Fuel, oil, labor, equipment, supplies, insurance, etc., if not collected as primary social and economic data under the FIN
Supply and Demand	Availability of products relative to consumer needs.
Income	Business, disposable, discretionary, etc.
Market Development	Providing products for additional consumers.
Product Development	New or changed product form.
Human Health	Toxins/contaminants affecting people.
Product Marketability	Consumer acceptance.
Employment	Changes in jobs in fishing and associated industries (commercial and recreational)
Taxes/License Fees/Subsidies	Industry response to changes in license/fee amounts and structure, vessel buyback programs, etc.
Regulatory Costs	Expenses for government implementation and industry response.
Social	<i>Information describing the cultural attributes of marine resources and their users.</i>
Demographic Data	Age, gender, education, etc.; if not collected as primary data under the FIN.
Conflicts	Behavior patterns within and among resource users.
Perceptions	Attitudes concerning resource status and users.
Rules/Statutes	Effect of management actions on behavior of resource users.
Effects on Communities	Effect of management actions on groups directly or indirectly utilizing marine resources.
Technology	<i>Engineering improvements which may affect the harvesting and use of marine resources.</i>
Harvest Gear and Methods	Changes to commercial and recreational equipment and strategies.
Processing Equipment and Methods	New processes, products, and methods to improve efficiency and meet government regulations (i.e., HACCP, OSHA).
Vessel Enhancements	Rigging, engines, etc.
Electronics	Navigation, communication, detection.
Safety	Lifeboats, life vests, survival gear, EPIRB, etc.
Pollution Control	Sewage treatment improvements (community, industry, non-point, and vessel).
Data Collection & Management	<i>Information that describes changes in programs to obtain, process and distribute data.</i>
Survey Design	Changes to data collection methods, standards, formats, etc.
Technology	Enhancements to computer hardware and software, electronic data collection devices, etc.
Contractors/Collection Agencies	Changes in responsibilities and roles for collecting and managing data.

Constituency input is gathered from the following groups:

- ▶ Fishing communities (recreational, commercial, charter and head boat, dealer/processors)
- ▶ General public
- ▶ State and federal legislators
- ▶ FIN partners (including public relations contacts)
- ▶ Special interest groups (i.e. environmental organizations, recreational retail sector)

Mechanisms to gather stakeholder input include:

- ▶ Public Meetings
- ▶ Dissemination of Public Information Documents

II. Information Dissemination

Target audiences for dissemination of FIN information include:

- ▶ Fishing communities
- ▶ General public
- ▶ State and federal legislators
- ▶ FIN partners
- ▶ Media
- ▶ Special interest groups

Mechanisms to disseminate FIN information include:

- ▶ Development of networks and databases for dissemination
- ▶ Informational advertisements/articles

III. Development of Informational Materials

Informational materials developed for the FIN include:

- ▶ Informational folders
- ▶ Inserts and articles in existing newsletters
- ▶ Brochures and fact sheets
- ▶ ComFIN/RecFIN(SE) Website

**TCC ARTIFICIAL REEF SUBCOMMITTEE
MINUTES
Monday, June 8, 1998
New Orleans, Louisiana**

APPROVED BY:

COMMITTEE CHAIRMAN

Mike Buchanan, Vice Chairman, called the meeting to order at 1:10 p.m. The following members and others were present:

Members

Mike Buchanan, MDMR, Biloxi, MS
Jan Culbertson, TPWD, Houston, TX
Les Dauterive, MMS, New Orleans, LA
Steve Heath, ADCNR/MRD, Gulf Shores, AL
Rick Kasprzak, LDWF, Baton Rouge, LA
Tom Maher, FDEP, Tallahassee, FL (*Proxy for Jon Dodrill*)
Wally Wahlquist, FWS, Atlanta, GA

Staff

Ronald R. Lukens, Assistant Director, Ocean Springs, MS
Nancy K. Marcellus, Administrative Assistant, Ocean Springs, MS

Others

Kerwin Cuevas, MDMR, Biloxi, MS
Jay Capuro, USCG Eighth District, New Orleans, LA
Mark Clark, ADCNR/MRD, Dauphin Island, AL
Villere Reggio, MMS, New Orleans, LA
Kay Marano Briggs, QuanTech, Rosslyn, VA
Bob Hiett, QuanTech, Rosslyn, VA

Adoption of Agenda

Without objection, the agenda was adopted as presented.

Approval of Minutes

T. Maher, proxy for J. Dodrill, moved to approve the August 26, 1997 minutes from the meeting held in Monterey, California. L. Dauterive seconded the motion. The motion passed.

Discussion of MMS/QuanTech Project

Bob Hiett from QuanTech, Virginia, gave a presentation to the Subcommittee. Hiett advised that QuanTech has been working for the NMFS on the Marine Recreational Fisheries Statistics Survey (MRFSS) for about 20 years. Last summer the Minerals Management Service (MMS) came out with a Request for Proposals to do a study of economic impacts associated with fishing and diving by recreational participants around oil and gas platforms in the Gulf of Mexico. When

TCC ARTIFICIAL REEF SUBCOMMITTEE

MINUTES

Page -2-

QuanTech reviewed the statement of work they realized that the opportunity to piggyback the MMS project upon the existing MRFSS made a lot of sense. The worst thing that could have happened was to create a whole new design which involves primary data collection and have two sets of data collectors out simultaneously trying to interview fishermen and divers. So they bid on the project and the approach that they proposed was one which essentially involves an integration of two studies, the first being the Marine Recreational Fisheries Statistics Survey done by NMFS and the second being the MMS project. The following is an outline of that project:

Project objectives:

To provide all services associated with the conduct of a study to determine the economic impact associated with offshore oil and gas structures for recreational fishermen, charter and party boat services, and recreational divers.

- to estimate demand of each of these user groups for offshore-structure-related recreational activities
- to calculate the economic and fiscal consequences of this demand
- to distribute these consequences of businesses, counties (parishes), and state/federal governments
- to analyze incremental expenses associated with offshore structure fishing opportunities.

Overview of QuanTech Approach:

- 12 month data collection period
- integration of MMS data collection with other on-going studies
- variance reduction due to larger samples sizes
- cost efficiency
- minimize data collection conflicts
- piggyback MMS data collection onto MRFSS study in private boat and charter boat modes of fishing for Alabama, Mississippi and Louisiana
- apply MRFSS methodology in Texas for private and charter boat modes
- use NMFS Beaufort lab head boat study as sample frame for party boat survey
- conduct diver interviews using MRFSS methodology supplemented by special interviews through dive shops and guide boat services
- conduct specialized telephone surveys with charter boat and head boat operators

MRFSS Design:

- stratified random sample of boat sites using a pps design
- data is collected throughout the year in two month increments referred to as waves
- detailed interviews with qualified anglers conducted on site by field staff members trained and experienced in both interviewing techniques and species identification
- detailed expenditures information is obtained in a follow up telephone questionnaire (AMES)
- a separate telephone survey of coastal households is conducted using RDD methods
- mean values per trip (from on-site interviews) are multiplied by total trips (from telephone survey) to obtain estimates of total values

TCC ARTIFICIAL REEF SUBCOMMITTEE MINUTES

Page -3-

Supplemental Data Collection:

- telephone survey of 400 charter boat operators using GSMFC/Panama City Lab/QuanTech boat lists
- telephone census of all party boat operators using Beaufort lab boat lists;
- telephone survey of 200 dive shops using computerized business list searches.

Hiett discussed where they are in the process now. They have developed a set of proposed questionnaires to be used. There are three kinds of questionnaires. There is the MRFSS questionnaire, the fisheries intercept form, where they ask how many times have you been fishing, what fish did you catch, and that sort of thing. There will be about ten supplementary questions to the MRFSS questionnaire. One of the things that is important to them is to be able to identify a specific rig or least a cluster of rigs where these people were fishing. One of the weaknesses of the MRFSS as it presently exists, is that you do not know where a person was fishing. So they are in the process of looking for maps. They found one good National Ocean Service chart that has an MMS overlay on it that appears to show every rig with the name and identification number of the structure. What they will do is cut those out into small portions so that each interviewer has a laminated sheet that he can show to a person during an interview and ask them to point to any particular site where they had been fishing. So this is an add on supplement to the intercept survey that will have to be done. There are two key parts to that. One is the need for the respondent to tell them where he or she was fishing and the need for them to agree to a follow up telephone survey. That is the objective of the supplemental questions.

The second questionnaire is a comprehensive follow up telephone survey. They will call them back and ask a lot of detailed information about how much they spent on each trip, whether it was a multi-day trip or a one day trip, did they stay overnight, etc.

Then there will be separate surveys for charter boat operators and head boat operators and that will be a one time telephone survey.

The survey will begin January 1, 1999. Hiett mentioned that Wally Milon, University of Florida, will be doing the economic analysis.

Hiett added that one of the things they could use are copies of any related studies that the states have done. They did a literature search but a lot of these studies are so recent that they were unable to obtain them.

National Artificial Reef Plan Revision

Lukens discussed two handouts regarding the National Plan. The first handout (Attachment 1) contains details of GSMFC changes to the draft National Plan. This language was approved at the March GSMFC annual meeting held in Destin, Florida. This language was presented to the Atlantic States Marine Fisheries Commission who also approved the changes.

The second handout (Attachment 2) contains new language adopted by the ASMFC under the Corps of Engineers in the Regulatory Requirements section. This language was also presented to the GSMFC Commissioners. At this time mail ballots approving this change have been received from members in each of the five Gulf states. It is anticipated that this language will be approved by the full Commission.

When the final draft of the Plan is submitted to NMFS, it will be the responsibility of NMFS

TCC ARTIFICIAL REEF SUBCOMMITTEE MINUTES

Page -4-

to put it in the *Federal Register* for public review. It could possibly be a year from now before we see the final product

Lukens advised that Richard Christian is working on updating the draft and will be getting copies out to everyone.

Gulf of Mexico Artificial Reef Data Base

Regional Data Base - A handout of the database structure and documentation was distributed to the Subcommittee. Lukens noted that the Subcommittee was correct in pursuing this because there has been a lot of interest lately especially with EFH Amendments and with NOAA working with the states in developing extensive GIS overlays.

Key points of discussion were:

- review the database, fill in missing data elements and correct coding inconsistencies.
- needs work in lease area - use MMS designation for lease area.
- send database to L. Dauterive to verify lease area and block number. (Les may need a written request to verify the database).
- active lease should be Y/N.
- lat/long - one conflict with J. Culbertson's header being listed as lon instead of long - advised to change her header for future updates.
- question on degrees, minutes, and decimal minutes - consensus was to leave as is because of GIS programs.
- coordinate type - T. Maher had concerns over software used to convert latitude and longitude.
- where possible, any new permits should have differential GPS coordinates.
- where possible, go out and get GPS coordinates on existing reef sites.
- bring up need in the future to include additional deployments and not just first deployment.
- add field before line 47: Deployments Y/N
- it is the decision of the individual state to track down sites where no materials are located.

It is the goal to make the database more efficient. There are a lot of blank fields in the data and Lukens stressed the need to be diligent about filling in all the fields.

At this time updates on new permits and new deployments will be requested in six month increments. Lukens will send the Subcommittee a memo with dates and deadlines for updates.

Literature Data Base - Lukens gave an update on the artificial reef literature received from Sport Fishing Institute. The Commission entered into agreement to take each piece of literature and enter the pertinent information into ProCite, a literature software package. All of this information should be entered by first of year. Lukens will contact Richard Christian, ASMFC, to find out what literature he has that can be entered into the database. Lukens will request a copy of those publications, make a copy for the Commission's files, enter the information into the database, and send the originals back to Christian. After this process, Lukens will provide a copy of the entire database for Subcommittee members to scan for any materials not entered in the database. The Commission must have a "hard copy" in-house before it is entered into the database. After that, new information will be added as it becomes available.

TCC ARTIFICIAL REEF SUBCOMMITTEE MINUTES

Page -5-

Publication - Lukens indicated that he would like to republish the publication, "A Profile of Artificial Reef Development in the Gulf of Mexico," after revision of the database in 1998. After that, it is desired to republish this document every 3-5 years with updates from database.

Lukens asked that everyone review the information in the front of that document as well as their individual state project writeups.

Discussion of Ships

J. Culbertson expressed her frustrations over the Navy ship situation. She noted that the *Spiegel Grove* situation was updated in the Minutes, but that information is outdated now. She has made several contacts with EPA in Washington, Dallas, and Georgia to find out what is going on. According to EPA, that whole matter could have been resolved if the people who wanted to buy the ship had chosen a contractor who had no enforcement actions against them. It probably would not have made the news and it probably would not have got tied up and affected everyone else. What happened is they chose a contractor who had enforcement action against them and that put EPA up against the wall. So they asked for a letter of discretion to release it to this contractor and then the contractor was indicted. Basically, EPA is not going to give that letter of discretion and the contractor is not going to be allowed to have the ship. A lot of scrambling went on and somebody wanted to buy the ship and try and take it to Brownsville, Texas, which is the only legal place that he could find to take the ship to clean it up. He was going to take that ship from Norfolk to Brownsville, Texas, and then take it back over to Key West. The Dallas EPA office said not to bring the ship to Brownsville. There was a small enforcement action against the contractor in Brownsville, which was cleared up. What happened affected all of us, and the Navy basically pulled back. Texas sent letters of inquiry regarding the Navy ships because their constituents are fighting to get a ship. Since this controversy happened EPA has put up blocks. Dallas put the biggest block up and said they are not going to handle it at a regional level and allow headquarters in Washington to make the decisions.

Culbertson was happy to report that Texas was able to obtain a small Navy ship. Mike Meier advised her to seek a ship that was in commission when the laws came out and therefore were cleaned of PCBs, asbestos, and lead while they were active ships.

The Subcommittee agreed that until EPA comes up with a protocol and an environmental impact statement on cleaning these Navy ships, no vessels will be released.

Meeting recessed at 4:30 p.m. until 8:30 a.m. Tuesday

Meeting reconvened at 8:30 a.m. Tuesday

White Paper Development

Lukens reported that over the past year he has been participating with a group in Florida, of which the primary players are the Florida Department of Environmental Protection and the Florida Corps of Engineers, Jacksonville District. There has been a lot of discussion on permit issues and

TCC ARTIFICIAL REEF SUBCOMMITTEE MINUTES

Page -6-

a lot of disagreement. Several times he has been asked what the official position of the Commission is on certain issues. There is no mandate to do this but perhaps it is time to formalize where we stand in the Gulf region with regards to certain artificial reef issues. Lukens put together some language on these issues and asked the Subcommittee to review and send comments back to him. There is no deadline at this time. Lukens added that he would write an introduction to establish a purpose statement for the paper.

Lukens also discussed this idea with Richard Christian who agreed to review the document and add their input.

When the paper is completed it can be forwarded to the Technical Coordinating Committee and the full Commission to establish positions on behalf of the GSMFC.

Rigs-to-Reefs

L. Dauterive discussed the MMS policy on Rigs to Reefs. The language, and this is policy as opposed to guidelines, refers to the issuing and quotas of permits. The MMS policy says that they support and encourage the reuse of obsolete offshore petroleum structures as artificial reefs, but only when state fishery management agencies take liability and responsibility for that particular structure. That is MMS policy. He noted that their office in California raised an issue about the language about the further delegation or transfer of the authority which is in the latest revision of the National Plan.

Maher mentioned that wording came about because of the Florida situation. If the words must or should are used in a national policy, given the situation with the permitting in Florida, it will not happen. So the avenue for Florida is to say at the discretion of the state agency they could further allow other governmental entities to hold artificial reef permits.

Buchanan added that Mississippi is the same way.

It is understood that these revisions are still in review. The revisions in the National Plan are guidelines, they are not policy.

MMS policy on Rigs to Reefs (artificial reefs):

The MMS supports and encourages the reuse of obsolete offshore petroleum structures as artificial reefs in US waters. However, the structure must not pose an unreasonable impediment to future mineral development. Also, the reuse plan must comply with the artificial reef permitting requirements of the Corps of Engineers and the criteria in the National Artificial Reef Plan. The state agency responsible for managing marine fisheries resources must accept liability for the structure before MMS will release the Federal lessee from obligations in the lease instrument.

As appropriate, MMS may facilitate cooperation between Federal lessees and other state and Federal agencies concerning the reuse of the structure. The MMS will share information with others concerning the environmental, social and economic consequences of reusing the structure as an artificial reef.

TCC ARTIFICIAL REEF SUBCOMMITTEE MINUTES

Page -7-

Permit Applications to the Gulf Council

Lukens reported that at the January 1998 Council meeting, the Gulf Council's Habitat Protection Committee discussed artificial reefs in the Gulf of Mexico with particular interest in artificial reef programs in the individual Gulf states. The Council has specifically charged its Artificial Reef Committee with reviewing and making recommendations regarding reef sites and materials used. Knowing what the states are doing with regard to artificial reefs is not only important for the management of the reef fish resources under this respective fishery management plan, but it is also needed for consideration of impacts to other fisheries habitat protection, impacts on essential fish habitat, and selection of marine reserves that are ongoing efforts of the Council.

The Council requested that each state notify them when new requests for permits of artificial reef sites in the Exclusive Economic Zone (EEZ) are made to the U.S. Army Corps of Engineers. This notification should be sent to the GSMFC office and the GSMFC will periodically advise the Council and appropriate management committees of the artificial reef development activities of the five Gulf states.

The Council feels that this approach will provide them with necessary information in its decision making process without potentially duplicating some of the activities of the GSMFC.

T. Maher suggested that the Council send a letter to the COE Jacksonville District Engineer to get copies of permit applications for Florida.

Lukens advised that he would make it clear to the Council that they are applications for artificial reef permits and it does not necessarily mean that the permit will be issued.

Publication of State Project Reports

Lukens discussed a letter sent to the Subcommittee regarding criteria for establishing a periodical publication that would contain state artificial reef research reports.

It was suggested that the name of the publication 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.

Initially, 300-500 copies will be made and distributed free of charge. The audience is mainly individuals involved in artificial reef work, but should be of interest to a broader group. The initial issues will be compiled and bound in-house to hold down costs.

Lukens indicated that at this time he has only received one paper from Bill Figley. The success of this endeavor is completely dependent upon Subcommittee members' commitment to submitting articles in a timely manner.

Meeting Strategy

R. Kasprzak presented the idea of holding Artificial Reef Subcommittee meetings at the state

**TCC ARTIFICIAL REEF SUBCOMMITTEE
MINUTES**

Page -8-

headquarters office in each state. This would allow some upper level management persons to attend or drop by the meeting. Everyone agreed that this would be a good idea to consider for future meetings.

Other Business

Lukens discussed the possibility of holding another joint meeting with Atlantic States Marine Fisheries Commission later in the year. If that is not possible, a meeting for the Subcommittee will be scheduled between September and November. Austin, Texas, was suggested as the meeting location.

There being no further business, the meeting adjourned at 11:15 a.m.

DETAILS OF GSMFC CHANGES TO THE DRAFT NATIONAL ARTIFICIAL REEF PLAN

Page 4, second line from the top. Change *must* to *should*. The sentence reads “Planning, long term monitoring, and evaluation measured against project goals and objectives should be incorporated ...”

Page 4, second line from the bottom of the page. Change *must* to *should*. The sentence reads “As a fisheries management tool, objectives of the artificial reef project should match ...”

Page 14, third line in first full paragraph. Change *must* to *should*. The sentence reads “Because of the potential long term effects of altering the environment through artificial reef development, and the potential impacts of artificial reefs on finfish and shellfish stocks, eligibility to hold a permit to develop an artificial reef should be restricted to the ...”

Page 14, sixth line in first full paragraph. Change *only* to *principal*. The sentence reads “The states’ natural resource agencies are the principal entities which can...”

Page 14, ninth line in first full paragraph. Change *must* to *should*. The sentence reads “If the state wishes to extend its permit authority to other entities, it should do so in writing...”

Page 14, tenth line in first full paragraph. Change *remains* to *should be*. The sentence reads “However, the state agency should be the ultimate authority ...”

Page 14, second line in second paragraph. Change *must* to *should*. The sentence reads “Further, such plans should be designed...”

Page 17, five lines from the top. Change *must* to *should*. The sentence reads “These efforts should be conducted ...”

Page 17, second line from the bottom. Change *must* to *should*. The sentence reads “Although these groups have traditionally played an important role in development of artificial reefs in many states, they should coordinate their activities ...”

Page 39, four lines from the top. Insert *light* between the comma and the word vehicle. The sentence reads “Among those that have been found to be persistently problematic are: wood, fiberglass, plastic, light vehicle bodies, fiberglass boats and boat molds, ...”

Page 39, six lines from the top. Insert the following language so that the sentence reads “ These materials should not be used in artificial reef development, *unless specific design features can be employed to provide durability and stability. For instance, plastics and fiberglass are durable and can be designed with sufficient density to ensure stability.*”

Page 45, first line in third full paragraph. Change *must* to *should*. The sentence reads “Eligibility to hold an artificial reef permit should be restricted to ...”

Page 45, second line in third full paragraph. Change *only* to *principal*. The sentence reads "These agencies are the principal entities which are ..."

Page 45, last line on page. Change *must* to *should*. The sentence reads "Restriction of artificial reef permits to state fishery management agencies should be ..."

Page 51, third line from the bottom. Change *must* to *should*. The sentence reads "Private reef construction, if allowed, should be conducted under the auspices..."

Page 58, fifth line from the top. Insert the following language so that the sentence reads "*It is recommended that* routine collection of data such as ..."

Page 58, seventh line from the top. Delete *must*.

OLD DRAFT

C. Regulatory Requirements

1. Corps of Engineers

The US Army Corps of Engineers (Corps), in accordance with Section 10 of the Rivers and Harbors Act of 1899 and Section 404 of the Clean Water Act, is responsible for regulating all construction activities which take place in the waters of the US. All legal artificial reef construction activities require the issuance of a Corps permit. Prior to approval of such a permit, other concerned agencies and departments within the Federal Government, as well as state agencies and other groups, are given the opportunity to review the proposed work to ensure compliance with existing regulations. This review also helps prevent the approval of projects that might negatively impact other existing or planned activities.

The Department of Interior (US Fish and Wildlife Service and Minerals Management Service), Department of Commerce (National Oceanic and Atmospheric Administration and NMFS), Department of Transportation (US Coast Guard), Department of Defense (US Navy), and Environmental Protection Agency all have a vested interest in the proper development and maintenance of artificial reefs to varying degrees. Each is allowed to comment on the issuance of any proposed reef permit by the Corps. Artificial reef construction permits are issued in accordance with guidelines established in 33 CFR (Parts 320 through 330) of November 1986.

Artificial reef planners, developers, and managers should work closely with the Corps Regulatory branch personnel in the district in which they intend to maintain artificial reefs. Good communication and close cooperation with these individuals, as well as clear understanding of pertinent regulations and local Corps district policies and procedures pertaining to the issuance of artificial reef construction permits is vital to a successful reef program.

Eligibility to hold an artificial reef permit must be restricted to the state agency responsible of managing marine fisheries resources. These agencies are the only entities which are responsible to hold the public trust in management of the resource and which can be expected to hold long-term accountability of liability on the permitted site. Coordination of reef development in states without a state-wide, site-specific plan would require state marine fishery resource agencies to work closely with the district Corps office to assure artificial reef permits are consistent with fishery management objectives. Restriction of artificial reef permits to state fishery management agencies must be established in the Corps regulatory programs at national and district offices under Corps rule. The NMFS also must provide guidance to assist the Corps in such regulatory action as may be required.

NEW DRAFT

C. Regulatory Requirements

1. Corps of Engineers

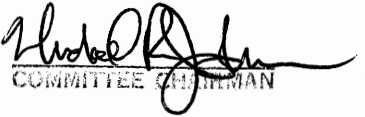
The US Army Corps of Engineers (Corps), in accordance with Section 10 of the Rivers and Harbors Act of 1899 and Section 404 of the Clean Water Act, is responsible for regulating all construction activities which take place in the waters of the US. All legal artificial reef construction activities require the issuance of a Corps permit. Prior to approval of such a permit, other concerned agencies and departments within the Federal Government, as well as state agencies and other groups, are given the opportunity to review the proposed work to ensure compliance with existing regulations. This review also helps prevent the approval of projects that might negatively impact other existing or planned activities.

The Department of Interior (US Fish and Wildlife Service and Minerals Management Service), Department of Commerce (National Oceanic and Atmospheric Administration and NMFS), Department of Transportation (US Coast Guard), Department of Defense (US Navy), and Environmental Protection Agency all have a vested interest in the proper development and maintenance of artificial reefs to varying degrees. Each is allowed to comment on the issuance of any proposed reef permit by the Corps. Artificial reef construction permits are issued in accordance with guidelines established in 33 CFR (Parts 320 through 330) of November 1986.

Artificial reef planners, developers, and managers should work closely with the Corps Regulatory branch personnel in the district in which they intend to maintain artificial reefs. Good communication and close cooperation with these individuals, as well as clear understanding of pertinent regulations and local Corps district policies and procedures pertaining to the issuance of artificial reef construction permits is vital to a successful reef program.

Although in some cases, private entities hold permits for artificial reef sites, eligibility to hold an artificial reef permit should be restricted to the state agency responsible for managing marine fisheries resources. Under all circumstances, the Corps will contact the appropriate state fishery agency prior to issuance of an artificial reef permit to give states the first option for holding permits on a proposed artificial reef site. At a minimum, permit applications must be reviewed by the state fishery management agency prior to issuance of a permit to construct an artificial reef. These agencies hold the public trust in management of the associated resources and are responsible for long-term accountability of liability on state permitted sites. Coordination of reef development in states without a state-wide, site-specific plan would require state marine fishery resource agencies to work closely with the district Corps office to assure artificial reef permits are consistent with fishery management objectives. Restriction of artificial reef permits to state fishery management agencies should be established in the Corps regulatory programs at national and district offices under Corps rule. The NMFS also must provide guidance to assist the Corps in such regulatory action as may be required.

APPROVED BY:


COMMITTEE CHAIRMAN

**FLOUNDER TECHNICAL
TASK FORCE MINUTES
June 15-17, 1998
Rockefeller Refuge, Louisiana**

Task force members arrived at the refuge Monday afternoon. Meeting materials including revised section drafts were distributed, and the group assembled for a reading session until 11:00 p.m. On Tuesday, June 16, Chairman Mike Johnson called the meeting to order at 8:15 a.m. The following were in attendance:

Members

Pete Cooper, Jr., Saltwater Sportsman, Buras, LA
Steve Hein, LDWF, Bourg, LA
Rebecca Hensley, TPWD, Corpus Christi, TX
Mike Johnson, FDEP, Marathon, FL
Dennis Johnston, TPWD, Austin, TX

Staff

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

Adoption of Agenda

M. Johnson moved to accept the agenda as written. R. Hensley seconded the motion, and the agenda was adopted as presented.

Approval of Minutes

Chairman Johnson asked the group to review the minutes of the last meeting and the work session summary. Several minor corrections were noted; however, R. Hensley moved to adopt both the November 11, 1997 meeting minutes and the February 25, 1998 work session summary as corrected. S. Hein seconded the motion which passed unanimously.

Review of Section Progress

Cover Art - D. Johnston distributed two versions of cover art for the group's consideration. The artwork was provided by Clemente Small from the graphic arts division of TPWD. The entire group was very happy with both depictions of the flounder and decided on the swimming version. P. Cooper suggested adding a small school of bait fish (longnose killifish, small mullet, or silverside minnows) to the drawing. All agreed and asked D. Johnston to relay the suggestion. The original artwork should be 11"x17", and the deadline for completion is December 1998.

**FLOUNDER TTF
MINUTES
June 15-17, 1998
Page 2**

Section 3 (Description of the Stock) - M. Johnson provided a revised version of section 3 on disk. Using the in focus computer projection unit, the group edited this section line-by-line. This proved to be an onerous task and consumed the majority of the scheduled meeting time.

Task force members will review the revised FMP and send comments directly to section authors. Several general comments were made including:

- Change Pete Cooper to Pete Cooper, Jr.
- S. VanderKooy will add the abbreviations page.
- Through the document, change "16 to 135 km" to "16-135 km."
- S. Hein will send Wenner et al. 1990 to M. Johnson.
- S. VanderKooy will send the Seafood Marketing document to C. Adams.
- M. Johnson reported the ProCite file for section 3 is $\frac{3}{4}$ complete.
- Table 3-1, check whether deep water is one word or two, and Venezuela is spelled wrong.

Next Meeting

The next meeting of the Flounder TTF was tentatively scheduled for August 17-20, 1998 in New Orleans, Louisiana. All authors will bring sections on disk for onsite editing using the in focus computer projection unit.

Other Business

The group expressed concern over the lack of progress on the description of the fishery section. S. VanderKooy agreed to contact M. Van Hoose and relay those concerns. S. VanderKooy noted that the Commission's habitat coordinator, Jeff Rester, is willing to assist D. Ruple with the habitat section.

Timetable Meeting

The revised timetable is as follows:

October 31, 1997	Drafts to the GSMFC office - complete document to be mailed out to the task force prior to next review meeting
November 17-18, 1997	Review meeting - work session on management recommendations, data requirements, review habitat section for first time

**FLOUNDER TTF
MINUTES
June 15-17, 1998
Page 3**

January 1998	Drafts to the GSMFC office for distribution prior to next review meeting
February 25-26, 1998	Review meeting
May 1998	All drafts; all revisions to the GSMFC office
June 15-17, 1998	Review meeting
August 17-20 1998	Final review meeting - point edit the entire document
October 1998	FMP to TCC for action
December 1998	Cover art deadline

There being no further business, the meeting adjourned Tuesday, June 16, 1998 at 10:30 p.m.

DRAFT

MINUTES

GULF OF MEXICO FISHERY MANAGEMENT COUNCIL

FLORIDA/ALABAMA HABITAT PROTECTION ADVISORY PANEL

TAMPA, FLORIDA

JUNE 17, 1998

ATTENDANCE

Members

Bob McMichael	FDEP, DMR, Florida Marine Research Institute
Robin Lewis	
David Anthony	
Andreas Mager, Jr.	National Marine Fisheries Service

Staff

Jeff Rester	Gulf States Marine Fisheries Commission
Cheryl Noble	Gulf States Marine Fisheries Commission

Others

Georgia Cranmore	National Marine Fisheries Service (Council Designee)
Robert Sadler	National Marine Fisheries Service
Mary Anthony	

The Chairman and Vice Chairman were unable to attend the meeting so a motion was made to appoint Georgia Cranmore as the Chairman for this meeting. The motion passed. The meeting of the Florida/Alabama Habitat Protection Advisory Panel was called to order by Chairman Georgia Cranmore at 10:15 a.m. June 17, 1998 in Tampa, Florida.

G. Cranmore stated that a public hearing on the EFH amendment would be held in the same room at 7:00 p.m. this evening. Everyone was invited to attend the public hearing. R. Lewis said that he was unaware of the public hearing that other people he felt would be interested in the public hearing did not know about it. He was upset that the Council did not do a better job of announcing the public hearing.

R. Lewis also asked when the final date for public comment on the EFH amendment was. J. Rester stated that public comment would be taken up until July 17, 1998.

The first order of business was reviewing the National Marine Fisheries Service Essential Fish Habitat Recommendations to the Gulf of Mexico Fishery Management Council. A. Mager stated

that if anyone had any comments that they could respond back to him on the Recommendations.

The next order of business was to review the draft Essential Fish Habitat Amendment for the Gulf of Mexico Fishery Management Council. General discussion ensued on the EFH amendment and D. Anthony stated that if the Council is concerned about EFH then special habitat requirements for species should be recognized as habitat areas of particular concern (HAPC). The designation of HAPC should warrant a higher level of protection than just the designation of EFH.

D. Anthony also stated that public notices need to be more widely distributed so that more people can comment on projects that affect habitat.

R. Lewis felt that the amendment does not take a proactive stance. There needs to be more proactive habitat restoration projects and the use of these projects should be stressed more in this amendment. R. Lewis is also not happy that the reference documents in the amendment are from the 1970s. He feels that there is more recent data out there. There should be a new section that deals with other relevant literature citations. These citations could include research that was not used in the document but provides additional sources of information about EFH. R. Lewis also feels that the document is weighted toward Louisiana. R. Lewis feels that this amendment does not contain the best data available on EFH in the Gulf of Mexico and the amendment should state that there is more and better data out there.

D. Anthony stated that section 7 needs to stress that these recommendations were developed in Texas. He was concerned about applying recommendations that were developed in Texas to the entire Gulf of Mexico.

A. Mager stated that these recommendations started off as internal guidelines and recommendations that NMFS used when reviewing projects. They were developed and modified to the recommendations that are now in the EFH amendment.

D. Anthony feels that section 7.1.1.2 is not set off from the previous section and this impeded his understanding of the section.

R. Lewis stated that he would provide better information for section 7.1.2.

R. Lewis requested the schedule of the EFH document. He wanted to know when the document will be submitted to the Department of Commerce and when it will become law.

J. Rester stated that currently the EFH amendment is out for public review. The Scientific and Statistical Committee of the Council and all APs will review the amendment before July and eight public hearings will be held throughout the Gulf during June and early July. The Council will review all AP and public comments at the July Council meeting and public testimony will also be held at the July Council meeting. A final EFH amendment will be sent to the Department of Commerce before the October 11th deadline. The Department of Commerce will send the amendment out for review and will also take public comment on the amendment. They will then

either approve it, disapprove it, or partially approve it.

D. Anthony felt the section on fishing impacts to EFH was the worst section. He stated that there have been studies done on fishing impacts from inshore roller frame trawling in the bait shrimp industry and these could have been used in the document.

D. Anthony stated that on page 161, the amendment should mention the use of vertical slits for maximum ingress and egress for animals in the entire water column.

D. Anthony wanted to mail additional comments and wanted to know who to address these additional comments. J. Rester stated that he could mail them directly to the Council or he could mail them to him and he would deliver them to the Council.

With no other comments the meeting adjourned at 11:50.

MINUTES

GULF OF MEXICO FISHERY MANAGEMENT COUNCIL

MISSISSIPPI/LOUISIANA HABITAT PROTECTION ADVISORY PANEL

NEW ORLEANS, LOUISIANA

JUNE 22, 1998

ATTENDANCE

Members

Cynthia Sarthou	Gulf Restoration Network
Bill Berry	Burlington Resources
Paul Coreil (for Jack Van Lopik)	LSU Sea Grant Program
David Richard	Stream Property Management, Inc.
Bill Jackson (for Andy Mager)	National Marine Fisheries Service
Fred Deegen	Mississippi Department of Marine Resources
David Frugé	U.S. Fish and Wildlife Service
Glenn Thomas	Louisiana Department of Wildlife and Fisheries
Terry Howey (for Katherine Vaughan)	Louisiana Department of Natural Resources

Staff

Jeff Rester	Gulf States Marine Fisheries Commission
Cheryl Noble	Gulf States Marine Fisheries Commission

Others

Karen Foote	Louisiana Department of Wildlife and Fisheries
Ron Hill	National Marine Fisheries Service
Chris Lagarde	Congressman Gene Taylor's Office
Ronny Paille	U.S. Fish and Wildlife Service
Allan Ensminger	Wetland and Wildlife Management
Paul Clifton	Louisiana Department of Natural Resources
Chris Seifert	Louisiana Department of Natural Resources
Jeff Harris	Louisiana Department of Natural Resources
Ken Roberts	LSU Agricultural Center
Philip Bowman	Louisiana Department of Wildlife and Fisheries
R. Michael Lyons	Louisiana Mid-Continent Oil and Gas Association
Vince Cottone	Texaco
Patrick Williams	National Marine Fisheries Service
Ric Ruebsamen	National Marine Fisheries Service

The meeting was called to order at 9:00 a.m. by Chairman Cynthia Sarthou.

An update on development proposals along Bayou Petit Caillou in Terrebonne Bay was presented by P. Williams of the National Marine Fisheries Service (Attachment I). Development pressure is not heavy in this area, but finding suitable alternative sites and areas for mitigation is problematic. The National Marine Fisheries Service recommends: 1) alternative sites and needs analysis should be prepared to evaluate the need for filling wetlands and 2) because mitigating for small acreage of impacts is problematic, mitigation efforts should be consolidated to improve success and cost effectiveness. The National Marine Fisheries Service also reported on the Coastal Wetlands Planning and Protection Restoration Act (CWPPRA) and on the successful implementation of NMFS sponsored projects under this program.

The next order of business was to review the draft Essential Fish Habitat Amendment for the Gulf of Mexico Fishery Management Council. Several members stated they will be sending individual comments on the amendment directly to the Council. The AP reviewed each section of the EFH Amendment and the following are their comments. They ask that the Council consider all comments equally, not just the consensus comments.

Section 2.0 - B. Berry stated that the last paragraph on page 11 should not be in there. He said his interpretation of the Act is that this is a consulting process and there are no allowances for regulatory requirements and feels this is a gratuitous statement. B. Jackson said the Council can propose regulatory responses if there is enough information to support them. He said the reason this was put in there is because there is not enough scientific data to support proposed management measures against impacts to EFH either from fishing or non-fishing threats. C. Sarthou suggested they change the paragraph to read "no regulations with regard to activities within the Council's jurisdiction" which would be fishing activities. The Council should also clarify at the beginning of the amendment that their reference to management measures relates to issues within their jurisdiction.

Section 3.0 - B. Berry stated the same comment as above applies to this section also. B. Jackson said the last paragraph on page 13 responds to the first comment as to why that paragraph is in there. The AP feels they should put this paragraph in Section 2 also. C. Sarthou said it is not clear to the public that the Council is not promulgating regulations for anything other than fishing activities so a simple way to rectify this issue is to simply state that. B. Jackson said that this is just for the time being but the Council has also been told to look at potential non-fishing threats within the purview of the Council and come up with proposed management measures to those potential threats that do adversely affect EFH. C. Sarthou said they cannot regulate those threats. The concern is not the proposed management measurements but the word regulations. This is a sensitive term and the use of this word scares people. If you do not modify that term it will be misinterpreted. Proposed management measures is something you can consult on but regulations are not and changing this will reduce the "fear factor." P. Coreil said he feels the Council should take into consideration an ecosystem approach to management and keep in mind the long term gains of a project and not the short term effects.

Section 4.1 - T. Howey said boundaries will change if we restore systems through diversions or other projects so it needs to be a flexible boundary.

Section 4.1.1.1 - F. Deegen stated some of the references in this section are not cited in the list of documents. Personal communications are not cited either. This needs to be double checked in all sections.

Section 4.1.1.1-5 - B. Berry stated that under *EFH Alterations of Particular Concern* in each of these sections, it addresses marsh losses but change of habitat due to urbanization is not covered. He said for example, we may not physically lose a wetland if a paved road, railroad track, levee, house, etc. is put down, but the wetland is changed drastically and these factors are ignored throughout the document. The nutria problem in Louisiana is also ignored in the document. He said it really bothers him that there is pollution due to agriculture and other industry but the oil and gas production industry is always pointed out even though NMFS claims they are not trying to single out any one industry. The statement "including oil and gas production" is used repeatedly and overemphasized throughout the document and he feels it should not be in there. On page 27, first paragraph, last sentence, take out "widespread" in the phrase "including widespread oil and gas production." D. Frugé stated the wetland loss rates in Louisiana are not accurate, they are less than the number presented on page 27. He will send correct figures to J. Rester.

Section 6.0 - F. Deegen said availability should be deleted from the following sentence in paragraph 2, page 100, "The role of habitat in supporting the productivity of organisms has been thoroughly documented in the ecological literature, and the linkage between habitat availability and fishery productivity has been clearly established for several fishery species." He said in some cases we have habitat availability that has been altered due to navigational channels and restoration so availability in the short term in some form is going to be limited or needs to be limited from an ecosystem approach.

Section 6.1.1 - B. Berry said oil and gas production is again singled out in the last paragraph of this section and all other factors are completely ignored. Also in this paragraph, the least damaging method should be used and not necessarily air boats. On page 103, third paragraph, D. Richard suggested moving the reference to marsh buggies to the conservation measures section.

Section 6.1.1.2 - B. Berry said that again the oil and gas industry is being singled out. These are not the only canals being dredged in Louisiana but the only ones mentioned.

At this point B. Jackson reminded the AP that individual comments can be sent to the Council but they should also send the appropriate scientific documents to support their comments. P. Coreil stated that this section does discuss the threats mentioned in earlier comments. C. Sarthou said these threats are put in certain subsections instead of throughout the document. B. Berry said that's true but the oil and gas industry is repeatedly singled out throughout the document.

Section 6.1.1.3 - T. Howey stated that the issue of marsh management as discussed in this section, discusses only the negative aspects of water control structures and does not provide information on the positive aspects of water control structures. T. Howey will submit a paragraph supporting this comment and he also suggests the Council revisit the Herke study. D. Frugé disagrees with the percentages stated in the first paragraph and will send in written comments.

Section 6.1.1.6 - P. Coreil stated there is literature coming out that suggests that atmospheric deposition may have more of an impact than previously thought. He will send this information to J. Rester.

Section 6.1.1.10 - P. Coreil stated the studies need to be cited that substantiates this section.

Section 6.1.1.11 - T. Howey stated that on the top of page 117 in reference to “accelerating erosion,” there are other studies that disagree with this. C. Sarthou said the Council should look at this and qualify the statement. They should give examples of both instances. T. Howey stated the words “potentially affecting” is used in most of the sections and not used in some and it appears not to be used in the sections that are “disfavored.” C. Sarthou disagrees and said it’s probably just the source of information that was provided. C. Sarthou suggests the Council revisit this statement and consider putting in a term such as “generally” or “traditionally” and then put “although in recent years there have been circumstances in which these have been shown . . .” All studies should be cited. B. Jackson said it is not possible to give the positive and negative of every potential threat mentioned in the document because of the limited resources and limited amount of databases. He said if anyone has a document or hard data supporting the positive aspects of seawalls, jetties, groins, etc., to send it in and it will be put in the document. T. Howey said it seems that the proper place for the projects that have been successful should be put under conservation measures. The DNR will be submitting comments on this to the Council. C. Sarthou suggested putting a generic statement at the beginning of this section stating that in no way does the Council intend this to mean on a state by state basis that some of these projects such as water control structures, cannot be managed in a method that does not pose a threat to EFH. D. Frugé said this would be good to have in the preface but thinks it is appropriate to have some qualifiers throughout, particularly on certain types of practices that are causing problems.

Section 6.1.2 - C. Sarthou read written comments by R. Lanctot (ATTACHED) on water quality issues - pg. 119 and the AP agrees with the comments and feels it should be included in the amendment.

Section 6.1.2.4 - On page 123, 6.1.2.4. under Hypoxia, the AP suggests in the first sentence to add “commonly referred to as dead zones” after oxygen depletion.

Section 6.1.2.7 - B. Berry said that under this section, the first sentence should be moved under 6.1.1.8 which is oil and gas operations. There is no correlation between oil and gas operations and petrochemical productions and therefore should not be mixed. He will submit written comments on this.

Section 6.1.2.9 - Again, P. Coreil feels this section should be modified and he will send comments to J. Rester.

Section 6.1.2.10 - C. Sarthou said the “Dredged Material” is under this section and it should be under 6.1.2.11 because it is a different subheading.

Section 6.1.2.11 - G. Thomas stated that on page 129 Chinese tallow should be included as an exotic plant threat to EFH. It shades out *Spartina* and other plants that would normally be there. B. Jackson said it was taken out because there was no documentation of the impact on EFH.

Section 6.2.1.2 - F. Deegen suggests the Council use more recent information. C. Sarthou said this discussion seems to be of a discussion of the value of recreational fisheries to the Gulf rather than the threats posed by recreational fisheries. Is it appropriate to have a discussion under threats of the economic benefits when you have very little discussion of what the threat is. There is ongoing concern that managers are not taking into full consideration the habitat loss that may be associated with recreational based operations in certain communities.

Section 6.3.1.2 - B. Berry said again that there is not a comprehensive discussion of all of the factors that cause loss. P. Coreil stated there is currently a debate in the scientific community over the causes of wetland loss in Louisiana (subsidence, lack of sediment, saltwater intrusion, etc.) and more information on the causes of wetland loss should be included in the document. There is plenty of information on this topic and should be cited in the document.

Section 7.1.1 - The question arose as to what the definition of a marine wetland is and T. Howey suggested deleting marine before wetland in this section. The AP agreed with this comment. C. Sarthou said the Chairman of the Council said legally it needs to stay in. T. Howey said the Department is concerned that in the generic amendment, the level of detail in this chapter seems extremely grave and they are also concerned that this section of the document has been essentially lifted from other guidelines that were used in one state and is now being applied gulfwide. This level of detail cannot be applied to all five gulf states. C. Sarthou said she disagreed that she feels that in this section the Council has not stated a strong enough generic policy that minimization and mitigation is an essential part of the amendment. T. Howey said all states already have guidelines in place in which NMFS plays a major part and does not see the value of adding these in this section. B. Jackson said the second paragraph in this section states that this is simply recommendation guidelines used by the Council and does not intend to alter any state guidelines or regulations and this is stated in 7.1.1.1. These are the basic steps the Council uses if they were to issue a permit.

The AP decided to identify the consensus comments on threats now and continue with Section 7 after that.

- There needs to be a greater balance in the discussion of hydrologic management/marsh management on pages 107-108. Only the negative aspects of water control structures are discussed and not all water control structures are a threat to EFH. Information on the positive aspects of water control structures need to be included.

- The AP feels the oil and gas industry has been unfairly singled out throughout the document as a threat to EFH. If this industry is mentioned in a section as a threat, other industries and sources that are threats need to be mentioned as well. Habitat change, urbanization, etc. are hardly mentioned at all and greater emphasis needs to be put on these threats. So, wherever wetland loss is discussed, oil and gas should not be discussed as the sole source of wetland loss.

- There is currently a debate in the scientific community over the causes of wetland loss in Louisiana (subsidence, lack of sediment, saltwater intrusion, etc.) and more information on the causes of wetland loss should be included in the document. There is plenty of information on this topic and should be cited in the document.

- The AP suggests including a statement in the introductory paragraph stating many of the guidelines suggested in the document are already being complied with by industry. Just because it is in the document does not mean it's not being done. For example, on page 166 letter g. states "An oil spill response plan should be developed and coordinated with federal and state resource agencies." This is already being done. The oil and gas industry could not operate without such a plan and the AP doesn't want people to think that if it's in the document it is a new idea and not already being done.

Section 7.1.1 - C. Sarthou stated the Council should add a statement in the introductory paragraph of the document and in Section 2.0 stating many of the guidelines suggested in the document are already being complied with by industry. The second paragraph of 7.1.1 should be moved to the first paragraph of this section because this explains these are guidelines, not regulations. The AP came to a consensus on this statement. The AP recommends adding a statement in the first paragraph of this section stating many of the guidelines discussed here are already being complied with by industry. D. Richard suggested going a step further by stating each state has specific guidelines which are essentially equivalent to these recommendations and in some instances exceeds these recommendations.

D. Richard and C. Sarthou feel the Council has not taken a strong enough policy position with regards to preserving, restoring or mitigating wetlands or habitat loss. The nuts and bolts are in the document but the guiding principles are not. The Council needs to put a clear statement in the document on their policy towards loss of wetlands and habitat. The AP agrees the Council should include a strong clear statement on their policy of preservation and restoration of habitat. They should include details of the practices they plan to use to restore and protect habitat. This should be a generic section to apply to all of the gulf states. The AP even suggests making this an executive summary to attach with the document. This is too important an issue to leave out of the document.

Section 7.1.1.1.1 - D. Richard stated a section on sediment breakwaters should be included in this section and asked that DNR provide the documentation on the positive aspects.

Section 7.1.1.1.9 - D. Richard said the term wetland impoundment has a negative connotation and would prefer the term hydrologic modification be used. D. Frugé will submit language to the Council suggesting how they can change this section to include the more positive term. The AP agreed with this.

D. Richard asked what does "normal access" mean in the last paragraph on page 161. In dealing with the navigational channels in Louisiana and Texas, normal access would be none. The AP suggests the Council revisit this section and re-word. Maybe instead of continuation of other biological interaction it could be maintenance of healthy new biological interaction, for example.

On page 162 letter a. C. Sarthou suggests changing “are not recommended” to “to be determined on a case by case basis.” She also suggested the Council needs a statement saying that some of these guidelines applies only to an unaltered environment and should be considered differently than in an altered environment which may be going through restoration efforts.

On page 164 letter a. - The AP does not agree that air boats are not destructive. They feel that equipment that will leave the smallest foot print possible should be used. Do not recommend one type over another.

Section 7.1.1.1.7 & 7.1.1.1.11 - G. Thomas pointed out that on page 159 letter g. it states propwashing is generally not a recommended dredging method but on pages 158 letter m. and 166 letter f. it states propwashing should be strictly avoided. The Council should be consistent on recommendations.

On page 165 D. Frugé stated there needs to be a qualifier under section c on the breaching of spoil banks. The AP agreed with this.

Section 7.1.1.1.15 - D. Frugé feels mariculture should not be allowed in marsh areas. He will send written comments to the Council.

Section 7.1.1.1.17 - T. Howey suggested adding “where practicable alternatives exist” to the last sentence in letter a.

Section 7.1.1.1.18 - D. Frugé said he would like to see mitigation that reduces substantial future losses of wetlands. This section needs to emphasize preventing loss and preservation of existing wetlands. Also, he disagrees with the comment on page 173 that states a ratio of at least two acres of mitigation for each acre of habitat destroyed should be recommended. He doesn’t like arbitrary replacement ratios it should be changed to a quantitative biologically based evaluation that would be applied on a case by case basis. The AP agreed with this comment.

Section 7.1.1.2 - P. Coreil said this section needs to be revised to be more balanced on impacts of river diversion projects. The AP feels the title is also inappropriate. After more discussion, the AP suggested taking this section out completely. If this section is left in, P. Coreil suggested that after the first sentence, to use this location to discuss the methods that are being used for coastal restoration in Louisiana.

Section 7.1.1.3 - D. Frugé said this same discussion is on page 156. The AP suggests the Council combine these two sections.

Section 7.1.2.1 - B. Berry feels oil field should be taken out of the last sentence and D. Frugé said wetland enhancement in this sentence is not the correct term. It should be hydrologic restoration. The AP agrees with this.

Section 7.2 - C. Sarthou said that the Council, although it can not come up with conservation measures, should at least start studying fishing impacts by closing small areas to fishing.

Section 7.3 - F. Deegen said he has updates on the section for Grand Bay, Mississippi and will provide them to B. Jackson.

Section 8.0 - C. Sarthou said she feels this section is very important and it may behoove the Council to state research needs for specific managed species. The AP agrees with this.

Members of the AP stated there are some typos in the document and the abbreviation for page should be consistent throughout the document. Personal communications that are cited are not listed in the references. Also, the maps are difficult to read.

Individual AP members will be sending more detailed comments to J. Rester or to the Council.

The Advisory Panel moved to request the Council to send a letter to the Louisiana Department of Natural Resources and the Corps of Engineers to consider habitat in their reviews of permits for projects. The motion passed with Terry Howey abstaining from voting..

The Advisory Panel moved to request the Council to send a letter of support to the head of the Task Force for CWPPRA projects acknowledging CWPPRA's importance to the preservation and maintenance of Louisiana's wetlands. The motion passed unanimously. J. Rester and C. Sarthou will draft this letter.

With no other business, the Advisory Panel adjourned at 1:45p.m..

MINUTES

TEXAS HABITAT ADVISORY PANEL MEETING
Hobby Airport Hilton
Houston, Texas
June 30, 1998

ATTENDANCE

Members:

Bill Baker	Houston Lighting & Power Company
Deyaun Boudreaux	Texas Shrimp Association
Dana Larson	Rigs to Reefs Company
Frederick Werner	U.S. Fish and Wildlife Service
Bill Jackson	National Marine Fisheries Service
(Representing A. Mager)	
Robert Spain	Texas Parks and Wildlife Department
Don Perkins	Commissioner, Gulf States Marine Fisheries Commission
Mike Hightower	Texas A&M University Sea Grant College Program
Frank Fisher	Rice University
Elaine Giessel	Citizen
Burt Moritz	Dow Chemical
James Bergan	The Nature Conservancy

Others:

Gary Valentine	USDA-NRCS
----------------	-----------

Staff:

Irby Basco	Gulf of Mexico Fishery Management Council
Jeff Rester	Gulf States Marine Fisheries Commission
Cheryl Noble	Gulf States Marine Fisheries Commission

Chairman Bill Baker called the meeting to order at 10:09 a.m. Everyone stated their name and affiliation. He said he has to leave at 11:30 a.m. and Bob Spain will then chair the meeting. Approval of the minutes from the November 18, 1997 meeting will be voted on at the next meeting. The purpose of this meeting is to review the Essential Fish Habitat Amendment so there is not an official agenda. B. Baker asked the panel members to send agenda items to J. Rester before the next Advisory Panel meeting later this year. He invited everyone to attend the public hearing on EFH at 7:00 p.m. tonight at this hotel. F. Fisher announced that I. Basco has been appointed to serve on the GMFMC for another 3 year term and everyone congratulated him.

J. Rester distributed NMFS recommendations on the EFH amendment and B. Jackson briefly explained the reason for the amendment (Federal Law-Magnuson) and asked that if anyone has any specific comments or questions to direct them to A. Mager, NMFS, St. Petersburg, FL.

I. Basco asked if the NMFS recommendations are similar for each Council. B. Jackson replied that each NMFS regional office is sending recommendations to each Council so the recommendations are unique to each region.

M. Hightower asked what are the jurisdictional boundaries of the amendment — is it state and/or Federal. B. Jackson said the federal law stipulates the DOC has to describe EFH for every species that is regulated under the Magnuson Act regardless of where that EFH occurs whether it's federal waters or state waters. The federal consultation process is not pursuant to the states only to other federal agencies. In others words, there's no overlap of Federal jurisdiction of states waters regarding EFH. Nothing will change that currently exists under the law. If a state agency proposes to do something that will impact EFH to a species governed under a Council FMP, NMFS will ask for consultation but the state does not have to comply. But if NMFS asks for a consultation with a federal agency, it has to comply. Basically, this is a descriptive process of state waters.

F. Werner asked if the Advisory Panel will send a letter of comment on the recommendations to the Council. J. Rester said all comments will be submitted to the Council and any comments that are approved by consensus will be stated as such. Also, each panel member may send in individual comments directly to the Council if they have strong feelings on a certain part of the document. He said to be specific with all recommendations and to give guidance and even turn in wording as you wish to see it.

The following are the recommendations by the Texas Advisory Panel:

Sections 1 - 3

Fred Werner stated the document does not clearly define how it will affect people's lives. The consequences to individuals need to be made clear in the document.

D. Boudreaux stated the state of Texas has already defined essential fish habitat and hazards that can affect it. She feels comfortable with how the state handles permits and comfortable with the document.

On page 13, the final sentence in the second paragraph, "EFH for the remaining managed species will be addressed in future FMP amendments, as appropriate," E. Giessel asked does this include any species not currently managed but may be in the future? Is this addressed specifically in the amendment for new species' habitat? Do we need to specify "future FMPs will include?" B. Jackson said these concerns are specified in the document.

B. Jackson said this is a generic amendment but when it is officially approved it will become a part of every FMP that's currently in existence. Any species that is added will automatically come under this amendment.

D. Larson congratulated B. Jackson, J. Rester and all others who created this document. A lot of work went into it. He said he concurs with F. Werner that the document needs to state more clearly why this amendment is necessary and how it will affect each individual. One paragraph will be sufficient but feels it is very necessary.

B. Jackson said that in Section 2 and Section 3, the introductory paragraphs explains why the EFH amendment was created and it lays out the parameters of exactly what the EFH amendment entails under the Magnuson Act.

D. Larson said not everybody will know what the Magnuson Act is. The document should tell them the oceans are important and why EFH should be a priority. The third point he wishes to make is to post the document on the web so more people would have access to comment on the document. J. Rester said the document and the maps are posted on the web. D. Larson said the specific address should be available.

E. Giessel suggested to move Section 1.2 from the Environmental Assessment to the preface. This would explain to the public the need for the document.

I. Basco said that as a Council Member, he will have to answer some questions from the public such as when will this research begin, how will it be funded, how long will it take, etc. and asked if anybody could answer these questions. Are funds available for this research? B. Jackson answered that to ask Congress for research funds, you must have a plan with justification. This document will serve as that. Congress specifically put in the Magnuson Act for the DOC, Council and NMFS to develop research needs and to justify these needs for the Gulf of Mexico. This document is the first step in bringing a consensus from all of the people, individual and fisheries, specific needs for the Gulf of Mexico.

B. Moritz stated the document may answer some questions from the general public. Habitat of important species is hard to manage and the purpose of the document is to define the species' habitat.

M. Hightower said most states currently have areas designated as critical habitat for certain fish species and asked if that is reflected throughout the rest of the document. B. Jackson answered this document is for federal managed species only.

M. Hightower stated "hardbottom" needs to be included in the third paragraph on page 11 when describing marine substrates. D. Boudreax asked why isn't Rio Grande Estuary included under the description of estuaries in Texas?

D. Larson stated that as he wrote in his letter, there needs to be more emphasis on the enhancement of habitat in the document.

Section 4

F. Werner stated that defining everywhere a fish occurs as EFH defeats the purpose of the amendment. It needs to be defined more specifically. D. Boudreaux said EFH is where there is the most concentration of a species and the most vulnerable life stages when they occur in a particular area as well as the time of year.

J. Rester said EFH is defined in this document not necessarily everywhere that the species occur but where they commonly occur. Also, when we define EFH it is all estuarine and marine waters of Gulf of Mexico. We're not necessarily saying that all estuarine marine waters are EFH for each species but with all species combined, when the distribution maps are overlaid, it covers the entire Gulf of Mexico. He said that could be confusing to some people. E. Giessel stated that if the definition isn't narrowed, it will have a lot of people worried and the Council must be prepared to defend it.

B. Spain stated that on page 23, paragraph 3, the last part mentions Galveston Bay 1983 - 1966. It should be 1996. This is also on page 22.

E. Giessel said that on page 22 the Matagorda ship canal depth is listed as 3.3m and she is quite sure it is deeper than that so this figure needs to be rechecked. She said that also on page 27, the estuaries and habitats documents cited are over 20 years old. There has to be newer information than this so this should be checked also.

At this time, B. Baker had to leave but stated he will be sending written comments on the sections regarding utilities.

B. Jackson stated that on page 49, Section 4.2, this is the most critical part of the document and he asked the panel to please send in comments on this. D. Larson stated he will be sending more detailed information on artificial reefs to J. Rester.

Section 5

D. Boudreaux stated she approves of the shrimp section. She said the TSA has recently done research on red snapper and has proof that trawling is not as harmful as recreational fishing to the red snapper population because the red snapper aggregates around artificial reefs, oil and gas platforms, etc. B. Jackson asked if she wants to add that information on snapper concentrations and findings around these structures. She said yes. D. Larson suggested to add a reference to platforms/artificial reefs in the last sentence under red snapper. B. Jackson agreed that this is a good idea but suggested that in 5.3.2 to refer back to section 4.2.4.1.2 that deals with reef fish use of artificial reefs. D. Larson suggested adding a sentence on artificial reefs and platforms under 5.3.2. There also needs to be more discussion of the quality and not just the quantity of habitat in the Gulf of Mexico.

E. Giessel said that on page 81, 5.2.3. there needs to be more discussion on mercury and other heavy metal contamination and its impacts on fish. B. Jackson said that on page 120 under

point source discharges, and maybe page 118 under water quality development, add language or a specific example on mercury poisoning and impacts. These could be cross referenced in the document. E. Giessel will send in the language.

Section 6

D. Larson said that in Section 6.1.1.2 , the last sentence, if it's offshore, it's not a canal, there's a term for it, trench, need to change the language. B. Jackson said it can't be changed because it was quoted from the Turner research. D. Larson said there are some pipelines larger than 40 inches (page 109) and this needs to be changed also. B. Jackson said again, this was quoted from the Turner research.

Some measurements in this section are metric and some are English. This needs to be standardized.

D. Larson said that on page 114 it mentions the damage cause by anchors but not anchor chains. This damage needs to be mentioned also.

On page 115 - 6.1.1.10 - the AP suggested changing the title to "Faulting and Subsidence." On page 114 the AP suggested adding "and Sulphur Operations" to the title of Section 6.1.1.8. D. Larson will send in the language for this addition. E. Giessel will send in more comments for Section 6.1.2. Also, on page 122 E. Giessel said that in the last paragraph referring to mercury in Matagorda Bay, it is not appropriate and should be moved to point-source contamination. Hypoxia should be in point-source under discharge types.

M. Hightower said that on page 125, 6.1.2.5, hot thermal discharge - the last sentence should be revised. Impacts are not on habitat from the actual discharge of heated water but the impingement volume of water. B. Jackson said that they found that the hot thermal effluent discharges were extremely lethal in the summer months and beneficial in the winter months and entrainment was a major secondary affect 12 months of the year. The alteration of EFH would be the volumes of water. B. Jackson suggested changing the title to "Industrial Cooling Operations" and power plants should not be singled out.

E. Giessel said that on page 125, under toxic waste, they should address remediation of previously contaminated sites. She will send language on remediation and proper management of preexisting contaminated sites. She said that under discharges, coastal operations impacted needs to be added. B. Jackson said he does not think there is any documentation on this and in order to add something to the document, the proper documentation must be cited.

M. Hightower said that on page 132 it states that nutria do not inhabit salt marsh and this is not true. Also, add Asian Swamp Eel under the fishes section on page 133. D. Larson said more fish species need to be added to this section and he will send comments with documentation.

On Section 6.1.2.7 the state regulations need to be added regarding discharges.

On page 136, Section 6.2 "Fishing Activities that may Adversely Affect EFH." D. Larson said fishing does have adverse impacts on EFH but this isn't quantified. B. Jackson said they do not have scientific justification to include this. This is explained in the research section that there needs to be more studies on this subject. D. Boudreaux stated the commercial fishermen are the smallest group of users in the Gulf of Mexico and you can't really determine an impact without trawling so it will be hard to do research on this. M. Hightower said that they've received proposals to research the effects of trawling but they weren't funded because in order to compare, there has to be a section where you don't trawl. This is impossible because you can't just rope off a section of the Gulf of Mexico and say you can't trawl there.

M. Hightower said the numbers on page 141 needs to be clarified. These numbers do not correspond with the numbers on page 18. One is describing coastal wetlands and the other is describing statewide wetlands. This also needs to be clarified. B. Spain will send in this information. Also in this section, they should be using hectares then acres.

On page 148, La Nina should be discussed after El Nino.

Also in this section, they should give scope of Hurricane impacts on fisheries.

On page 150 higher salinity may be one of several causes of oyster declines. E. Giessel said long term drought conditions should be discussed under water quality.

On page 159 "G" the AP feels propwashing should be strictly avoided as a dredging method. Generally needs to be taken out of the sentence.

On page 160 "A" add as long as they don't cause damage elsewhere.

The AP agreed that on page 173 mitigation should require success monitoring. Add "E" statement requiring this. They should require success and should monitor the progress and have a specific time-frame to be successful. If it isn't successful they should have to start over. The ratio should be determined on a case by case basis.

E. Giessel stated that on page 160 add to "A" "as long as disposal does not cause damage elsewhere" at the end of the second sentence.

F. Werner said subsidence has a major impact on the Texas coast and 7.1.1.2 should be rewritten to emphasize this problem.

M. Hightower suggested changing the title on page 174, Section 7.1.1.3 to pipeline installation not construction.

E. Giessel stated that in reference to watershed levels planning on page 166, sea floor "C" - representatives from fisheries should be given the opportunity to comment. Freshwater inflow to estuaries need to be addressed in this section also. She and B. Jackson will submit language for this section.

Section 8

The AP agreed that research needs should emphasize creating, enhancing, and restoring habitat.

The Texas Habitat Advisory Panel accepts the document with proposed changes/recommendations.

There being no further business, the meeting adjourned at 3:55 p.m.



Spotted Seatrout Technical Task Force
WORK SESSION SUMMARY
July 13-14, 1998
Austin, Texas

Due to the lack of a quorum, the members present adjourned to a work session at 12:30 p.m. Those in attendance included:

Members

Mike Buchanan, *proxy for J. Warren*, MDMR, Biloxi, MS
Larry McEachron, TPWD, Rockport, TX
Dale Shively, TPWD, Austin, TX
Jerry Waller, ADCNR/MRD, Dauphin Island, AL

Staff

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

Using the computer projection unit, sections 3, 4, 5, and 6 were reviewed and edited onsite. Sections 9 and 10 were also briefly reviewed and edited somewhat.

Comments and changes were incorporated and the revised document is attached. A few questions remain within the text. Task force members were asked to look over the document and respond accordingly. Highlighted text indicates changes from the last meeting which need clarification and/or approval. Make all editorial changes directly on the manuscript, copy it for yourself, and send a copy to the GSMFC office for inclusion. The IJF staff will accept missing information via paper copy, disk file, or e-mail attachment. E-mail attachments directly to the office would, however, be the most timely.

The sociology section is nearing completion. Please send any comments to section 6. Sections 3 and 5 are basically complete with the exception of last minute revisions just prior to publication. Our habitat program coordinator, Jeff Rester, agreed to look over section 4 and will provide additional text on habitat loss and degradation. Chuck Adams reorganized section 7 and will update through 1997 in the near future. Bob Muller continued to send additional sections for the stock assessment.

The only way the FMP will be complete by the October meeting of the Technical Coordinating Committee is to work via correspondence. The group was asked to use all means of document transport (mail, fax, E-mail, etc.) to provide section information for the compilation of the document. It is critical that changes to the document are received at the Commission office in a timely manner. A fully cooperative effort by all members is necessary to finish the plan.

The work session adjourned on Tuesday, July 14, 1998 at 12:10 p.m.

*TTF reviewed and
approved 11/18/98 cy*

RecFIN(SE) Social/Economic Work Group Report

RecFIN(SE) Social/Economic Work Group

September 1998

RecFIN(SE) Social/Economic Work Group
Meeting summary
July 14-15, 1998
Tampa, Florida

The meeting was called to order at 1:00 p.m. and the following people were present:

Tony Lamberte, GMFMC, Tampa, FL
Steve Holiman, NMFS, Tampa, FL
Ron Lukens, GSMFC, Ocean Springs, MS
Lisa Kline, ASMFC, Washington DC
Marina Guedes, ASMFC, Washington DC
Dave Donaldson, GSMFC, Ocean Springs, MS

Purpose of the Meeting

D. Donaldson stated that there were several issues that need to be addressed by the group. There are identification of minimum data elements for the social and economic aspects of fisheries, review and expand the quality assurance and quality control and RecFIN(SE) QA/QC document to include standards for collection and management of social and economic data, and discussion regarding the market and social/economic modules for ComFIN.

Discussion of Minimum Data Elements for the Social and Economic Aspects of Fisheries

The group discussed and reviewed the information developed by the ACCSP Committee on Economic and Social Sciences (CESS). The group reviewed the three types of surveys for collection of commercial social and economic data (annual fixed cost, trip cost, and annual owner/captain/crew) as well as the survey instruments for these surveys. The group agreed with the concept for the collection of these data. The group decided that the FIN will collect social and economic data on commercial harvesters using three separate surveys identified by the ACCSP. The annual fixed cost survey will be directed at the owner/operator. The data elements are listed in Table 1. The trip cost survey will evaluate the variable costs associated with the most recent commercial fishing trip of a particular vessel. The data elements are listed in Table 2. This survey will be directed at the captain of the vessel. And the annual owner/captain/crew survey to gather sociological information. The data elements are listed in Table 3. These survey will be conducted on a voluntary basis. It was noted that the ACCSP will conduct a one year evaluation study to determine the appropriate survey methodology (i.e., mode of collection, statistical design) for the three commercial harvester surveys listed above. The Social/Economic Work Group will be involved in these evaluations and the results will be utilized by the FIN. The group noted that special studies to collect more in-depth social and economic data might be needed in addition to the long-term data collection efforts. The group stated that all social and economic data will be confidential, with access granted only to authorized users as identified in the FIN confidentiality protocols. The group reviewed the survey instruments for collection the commercial social and economic data. The group identified several areas that need to be addressed by the FIN/ACCSP social/economic groups. The survey instruments are attached. The following issues were discussed and need to be addressed by the Committee:

Annual Fixed Cost Survey

Under Vessel Information

- The group noted that the question, “Did you have this vessel built or did you purchase it from another owner?” does not cover the situation where the operator bought the vessel from a dealer.
- Under Market Values, it was suggested that both resale value and replacement value should be collected since the two values provide different information. It was noted that if only one element could be collected, resale value provides more useful data.

Trip Cost Survey

Under Introductory language

- It was noted that it needs to be made very clear to fishermen about exactly which trip ACCSP/FIN wants them to report data about. The current language can be misinterpreted which can cause confusion and collection of the “wrong” data.

Under Identification Information

- For trip identification number, the group wondered if this information could be provided to alleviate any confusion on what trip we want data from. It was noted that the trip id number may not be available to provide. It was decided that the Committee needed to further examine this issue. And for oil/lubrication, the issue of unit of measure (quarts or gallons) needs to be clarified by the Committee.

Under Choose type of lay system

- The group asked if lay system was a standard term used by commercial fishermen or if it was specific to a particular region or area. If it is regional, the survey may need to be modified for that particular area to include the term.

Annual Owner/Captain/Crew Survey

Under Identification Information

- Again the issue of trip identification number was raised and needs to be clarified.
- The group wondered why “Race” was not included in demographics section.

The group also examined the information developed for collection of recreational social and economic data. The FIN agreed that recreational and for-hire social and economic data on recreational will be collected through four separate surveys developed by the ACCSP. Social and economic data for finfish recreational and for-hire fisheries will be collected through the addition of data elements to existing telephone and intercept surveys. These additional data elements will be added at three and six year intervals. The data elements are listed in Table 4. Non-consumptive information will be collected at three and six year intervals, not to coincide with the finfish recreational and for-hire social and economic survey. The data elements are listed in Table 5. The for-hire social/economic and shellfish/crustacean surveys are currently being developed by the

ACCSP and will include involvement by the Social/Economic Work Group. All of these surveys will be conducted on a voluntary basis.

The group agreed that additional programs other than the MRFSS should be developed to fully describe the socio-economic impacts of the recreational industry (e.g. bait/tackle retail) and provide information on impacts of fishery regulations on communities dependent on recreational fishing.

Review and Expand the QA/QC Document

The group briefly reviewed the QA/QC document. **The Social/Economic Work Group agreed that the QA/QC document should cover both commercial and recreational aspects of fisheries and a work group should be tasked to begin developing the commercial sections for the document in 1999. In addition, the group recommended that the next section to be developed in the QA/QC document should concern mail surveys.** The group also suggested adding some language regarding pre-testing of surveys and wording of survey questionnaires should be considered to minimize potential biases. Staff will add this language to the current document.

Discussion of Market And Social/economic Modules For ComFIN

The group addressed this topic under the Discussion of Minimum Data Elements section of this report. The group considered both recreational and commercial data collection of social and economic information at the same time and the discussion of commercial data was covered during these discussions.

Other Business

The group discussed the overall design of the social and economic aspects of data collection. The group recommended that the Social/Economic Work Group and CESS work together to ensure compatibility between the FIN and ACCSP. Along those lines, the group discussed the possibility of combining the Social/Economic Work Group with the CESS in an attempt to ensure compatibility and avoid duplication of effort in the development of social and economic data collection activities. Since the majority of members of the Social/Economic Work Group are already on the CESS, it would be a simple matter of adding one more member (Tony Lamberte, GMFMC) to the CESS. After some discussion, **the group recommended that Tony Lamberte be added to the CESS and the D. Donaldson attend as many CESS meetings as possible to provide for coordination between the two programs.** The group also discussed that language be added to the program design document that explains that the development of a cooperative data collection and management program is a dynamic process and the document reflects the current situation and can change in the future. Staff noted that language will be developed and added to the program design document prior to the September meeting.

There being no further business, the meeting was adjourned at 12:00 noon.

Table 1. Social and economic data element to be collected on commercial harvesters through the FIN Annual Fixed Cost Survey on an annual basis.

Data Element	Description	Format
Fixed Costs		
Vessel Identification	Unique vessel identifier (i.e. Coast Guard, state registration number, etc.) These identifiers must be trackable through time and space.	11 character
Annual insurance costs	Hull, health, protection and indemnity, mortgage, etc.	6 digit numeric plus 2 decimal places
Annual haulout/overhaul	Total cost for haulout/overhaul for the vessel	6 digit numeric plus 2 decimal places
Dockage	Total cost for vessel dockage, home port and transient dockage	6 digit numeric plus 2 decimal places
Professional fees	Accounting, legal, bookkeeping, tax filing, etc.	6 digit numeric plus 2 decimal places
Loan payments	Principal and interest	6 digit numeric plus 2 decimal places
New gear acquired list, cost	Total cost of new gear acquired (total cost of replacement gear and total cost of additional gear)	6 digit numeric plus 2 decimal places
Repairs	Total cost of repairs that were conducted in the previous year	6 digit numeric plus 2 decimal places
Maintenance	Total cost of maintenance that was conducted in the previous year	6 digit numeric plus 2 decimal places
Crew salary	Total crew cost for those crew not paid on a trip basis	6 digit numeric plus 2 decimal places
Crew benefits	Total cost for crew benefits	6 digit numeric plus 2 decimal places
Taxes	Income, property, etc.	6 digit numeric plus 2 decimal places
Vessel improvement cost	Total cost of vessel	6 digit numeric plus 2 decimal places
Vessel permit fees	Total cost of all permits held by the vessel	6 digit numeric plus 2 decimal places
Auto/trailer	Total payments on autos and trailers used by the vessel (Check with CESS to clarify)	6 digit numeric plus 2 decimal places
Office	Total cost of office space used by the vessel crew and support staff	6 digit numeric plus 2 decimal places

Association(s) fees	Total fees and dues paid to commercial fishing associations	6 digit numeric plus 2 decimal places
Onshore permits/export/import/license/etc. fees	Total fees import/export permits/licenses	6 digit numeric plus 2 decimal places
Cold storage rental	Total cost for cold storage rental	6 digit numeric plus 2 decimal places
Onshore (non-owned) processing/holding costs, leases	Total cost for leases of rental of onshore processing/holding facilities	6 digit numeric plus 2 decimal places
Advertising	Total cost for advertising of for-hire vessels and supporting activities	6 digit numeric plus 2 decimal places
Lease or mortgage of onshore facilities	Total cost for lease or mortgage payments for onshore facilities	6 digit numeric plus 2 decimal places
Onshore employee salaries and benefits	Total cost for onshore employees salaries and benefits	6 digit numeric plus 2 decimal places
Sources of financing	List the sources of financing for the vessel and onshore facilities	25 characters
Additional Annual Information		
Value of Catch in Storage	Total value of catch that is in storage	6 digit numeric plus 2 decimal places
Ownership type	Sole proprietor, partnership, owner-operator, etc.	20 characters
Relationship to any partner (s)	e.g., household member, relative, friend, neighbor, etc.	20 characters
Engine brand(s) (Propulsion Equipment) Fuel type	Engine Manufacturer	20 characters
Engine Age(s)	Age of engine in years	4 digit numeric
Engine fuel type(s)	Type of fuel used to run engine	15 characters
Harvest gear	Number and description of gear that are used in the harvest of marine resources from the vessel	LOOK AT CATCH EFFORT
Deck gear	Number and description of gear that is permanently affixed to the vessel	LOOK AT CATCH EFFORT
Wheelhouse electronics	Number and description of all electronics that are located in the wheelhouse of the vessel	25 digit alpha numeric
Gear-mounted electronics	Number and description of all electronics that are mounted to the harvest gear.	25 digit alpha numeric

On-board processing/refrigeration	Equipment list, descriptions, capacities of all equipment on board that are used for processing/refrigeration	25 digit alpha numeric
Vessel purchase year This information may be collected via the VRS and will not need to be collected here.	Purchase or acquisition year	4 digit numeric
Vessel price	Price of vessel at time of purchase or acquisition	8 digit numeric plus 2 decimal places
Estimated market value of vessel	Estimated market value of the vessel excluding all harvest gear	8 digit numeric plus 2 decimal places
Estimated market value of gear	Estimated market value of all harvest gear that is used by the vessel	6 digit numeric plus 2 decimal places
Onshore facilities (list, descriptors, capacities)	List the onshore facilities that are leased/rented/owned by the vessel	25 alpha numeric
Number of other vessels that also use the same onshore facilities	Other vessels that use the same onshore facilities	3 digit numeric

Table 2. Social and economic data to be collected on commercial harvester through the FIN Monthly Trip Report.

Data Element	Description	Format
Variable costs (Trip Costs)		
Vessel Identification	Unique vessel identifier (i.e. Coast Guard, state registration number, etc.) These identifiers must be trackable through time and space.	11 character
Trip Identification	Trip identification that is derived from the vessel/dealer trip report	reference trip ID description
Replacement or repair cost of gear and equipment lost or damaged	Total replacement or repair cost of equipment lost or damaged on this trip	6 digits numerical plus 2 decimal places
Fuel used on this trip - Quantity	Gallons of fuel used on this trip	4 digit numeric
Fuel used on this trip - Cost	Cost for all fuel used on this trip	5 digit numeric plus 2 decimal places
Oil used on this trip - Quantity	Gallons of oil used on this trip	3 digit numeric plus 2 decimal places
Oil used on this trip - Cost	Cost for all oil used on this trip	5 digit numeric plus 2 decimal places
Bait	Description, Quantity, and Cost of all bait used on this trip	
Ice used on this trip - Quantity	Tons of ice used on this trip	3 digits numeric
Ice used on this trip - Cost	Cost for all ice used on this trip	5 digit numeric plus 2 decimal places
Water used on this trip - Quantity	Gallons of water used on this trip	4 digits numeric
Water used on this trip - Cost	Cost for all water used on this trip	5 digit numeric plus 2 decimal places
Total food cost	Total food cost for this trip	5 digit numeric plus 2 decimal places
Trip grading/ handling/ unloading	Total cost of grading/handling/unloading of catch for this trip	5 digit numeric plus 2 decimal places
On-board processing costs	Total cost for on-board processing of catch for this trip	5 digit numeric plus 2 decimal places
Local transport costs	Total cost of local transporting of catch for this trip	5 digit numeric plus 2 decimal places

Supplies	Total cost of additional supplies not itemized above	5 digit numeric plus 2 decimal places
Labor costs		
Crew share formula	Description of the formula that is used to determine crew share for this trip	25 alpha numeric
Total crew cost	Total monetary amount that was given to the crew for this trip	6 digit numeric plus 2 decimal places
Total captain cost	Total monetary amount that was given to the captain for this trip	5 digit numeric plus 2 decimal places
Non-monetary compensation estimated value	Estimated value of all non-monetary compensation that was given to the crew for this trip	5 digit numeric plus 2 decimal places
Non-monetary compensation distribution formula	Estimated value of all non-monetary compensation that was given to the captain for this trip	5 digit numeric plus 2 decimal places
Captain and crew bonuses	Total of bonuses that was given to the captain and crew for this trip	5 digit numeric plus 2 decimal places

Table 3. Socio-demographic data elements to be collected on commercial harvester through the FIN Owner/Captain/Crew Survey.

Data Element	Description	Format
Vessel Identification	Unique vessel identifier (i.e. Coast Guard, state registration number, etc.) These identifiers must be trackable through time and space.	11 character
Trip Identification	Trip identification that is derived from the vessel/dealer trip report	reference trip ID description
Classify yourself	Owner, Captain, Crew, or Other	15 characters
Household composition	Number and relationship of individuals in the household	
Employment status of adults	e.g., employed, unemployed, retired, student, full-time, part-time, self-employed, any combination	20 characters
Education	Highest level of education that was completed	2 digits
Marital/cohabitational status	Current marital or cohabitational status of respondent	2 digits
Age	Age of the respondent	3 digits numeric
Gender	Gender of the respondent	1 character
Ethnicity	Ethnic background	15 character
Primary language spoken in the household	Primary language spoken by household members	15 characters
English-language skills	English language proficiency	2 character
Religious affiliation	Religion of respondent	15 characters
General health	Current health status	2 character
Percent of annual household income from commercial fishing	Net & gross percent of household income that is generated through commercial fishing or support activities	3 digits numeric
Alternative occupational opportunities that are available to you	Of these opportunities how many years of experience do you have in each	25 character
Total annual income from commercial fishing	Total household income that is generated through commercial fishing	6 digits numeric plus 2 decimal places
Primary source of income for the previous Spring	List the activity that generated the majority of your income during the previous Spring	25 characters
Primary source of income for the previous Summer	List the activity that generated the majority of your income during the previous Summer	25 characters

Primary source of income for the previous Fall	List the activity that generated the majority of your income during the previous Fall	25 characters
Primary source of income for the previous Winter	List the activity that generated the majority of your income during the previous Winter	25 characters
List your memberships of organizations or associations that are involved in fishery issues	Names of fishery organizations or associations of which respondent is a member	25 characters

Table 4. Social and economic data to be collected through the FIN recreational and for-hire finfish survey to be conducted every three years.

NOTE: All of the surveys are add-ons to the MRFSS and for right now will use MRFSS formats.

Data Element	Description	Format (MRFSS)
Data elements to be added every three years (Year 3, 6, 9, etc.)		
Trip-related expenditures	lodging, food, transportation, fees, equipment rental, private/rental boat operating expenses, bait	
Other purchases primarily for marine recreational and for-hire fishing	fishing tackle, boats, other fishing related equipment, other items	
Origin of purchases	The location where purchases were made, by expenditure category	
Hourly wage/income	hourly wage if known - if not annual gross income	
Employment Status	Current employment status (i.e. employed full-time, part-time, unemployed, retired, etc.)	
Age	Age of respondent	
Boat ownership	Ascertain boat ownership and primary use (i.e. fishing)	
Primary trip purpose	Primary purpose of trip (i.e. fishing, vacation, business trip, etc.)	
Trip Length	Length of trip (i.e. day-trip or overnight-trip) and number of days fished on trip	
Additional data elements to be added every other third year (Year 6, 12, etc.)		
Education	Highest level of formal education that was completed	
Ethnicity	Ethnic background	
Gender	gender of the respondent	
Occupation	Job description	
Household composition	Number and relationship of individuals in the house hold	
Motivations for fishing	Reasons for salt water fishing	
Substitute activities	Alternative use of time	
Attitudes toward management	Attitudes about management regulations	
Attitudes toward and knowledge of marine contamination	Attitudes toward and knowledge of contaminated fishing sites	
Self-Definition as Subsistence/Recreational/For-Hire	Whether anglers see themselves as recreational, for-hire, subsistence, or a mixture	

Involvement in commercial fishing	Extent, if any, of angler household involvement in commercial fishing	
Other recreational/for-hire/subsistence activities involving collection of natural resources	Types and use of non-fish marine organisms (e.g. shellfish, crustaceans, kelp) and other natural resources (e.g. berries, fruit, other wild plants, wood for fuel)	
Catch distribution networks	Categories of people with whom the above are shared (e.g. household, other family, neighbors, local charities)	
Satisfaction level	Give your overall satisfaction level with this fishing trip	

Table 5. Social and economic data to be collected through the FIN marine non-consumptive survey to be conducted every three years.

NOTE: All of the surveys are add-ons to the MRFSS and for right now will use MRFSS formats.

Data Element	Description	Format (MRFSS)
Data elements to be added every three years (Year 3, 6, 9, etc.)		
Trip-related expenditures	lodging, food, transportation, fees, equipment rental, private/rental boat operating expenses	
Other purchases primarily for non-consumptive activity	List the additional expenses that are directly related to non-consumptive activities	
Origin of purchases	The location where purchases were made, by expenditure category	
Hourly wage/income	hourly wage if known - if not annual gross income	
Employment Status	Current employment status (i.e. employed full-time, part-time, unemployed, retired, etc.)	
Age	Age of respondent	
Boat ownership	Ascertain boat ownership and primary use (i.e. sightseeing, diving, fishing)	
Primary trip purpose	Primary purpose of trip (i.e. viewing species, vacation, business trip, etc.)	
Trip length	Length of trip (i.e. day-trip or overnight-trip) and number of days fished on trip	
Date	Date of trip	
Viewing Site	State/county/zip and latitude/longitude of viewing site or boat return site	
Target species sought or species groups	Species that the trip was targeted to view	
Viewing mode	Viewing access mode	
Residence	State/county/zip of permanent residence of marine ecotourist in all modes	
Number of trips (avidity)	Number of trips by mode/state during specified time frame	
Trip duration	The time the trip took, from shore to shore (boat) or time spent viewing	
Additional data elements to be added every other third year (Year 6, 12, etc.)		
Education	Highest level of formal education that was completed	

Ethnicity	Ethnic background	
Gender	gender of the respondent	
Occupation	Job description	
Household composition	Number and relationship of individuals in the house hold	
Satisfaction level	level of satisfaction with trip	
Motivations for viewing	Reasons for viewing	
Attitudes toward management	Attitudes about management regulations	
Attitudes toward and knowledge of marine contamination	Attitudes toward and knowledge of contaminated viewing sites	

FIXED COST SURVEY

YOUR VESSEL WAS RANDOMLY SELECTED TO PARTICIPATE IN A COMMERCIAL FISHING VESSEL FIXED COST SURVEY.

The information you provide will help to describe the economic characteristics of vessels similar to yours. Fisheries managers need this kind of information in order to make informed decisions that may ultimately affect your fishing business. Decisions are being made every day that may impact you. **Do you want those making these decisions to have accurate information about your fishing operation?**

Since you are being asked to report only the expenses you incur regardless of how many trips you take (for example, insurance payments are considered "fixed" costs), the FIN will never know your entire costs for the year. Even if you participate in the Trip Cost Survey, which you may also be randomly selected for, you will be asked to only report a few of your trips and so the FIN will not know what your total costs were for the year. Therefore, the FIN **will not know your profit**. Individual vessel information will be kept confidential and only reported in aggregate or by averages according to vessel types.

Instructions

This survey asks you to supply information, related to your annual fixed costs of owning a commercial fishing vessel. Please use information (most likely from your tax returns) from the most recent fiscal year for which you have complete records.

It is extremely important that the correct vessel identification number is used. This information will be used with the information you provided to the Vessel Registration System and state and federal permitting systems. Cost information is meaningless unless information about the vessel and its permits are known. The vessel identification number provides a link to these other databases so that you don't have to provide that information in this survey.

If you don't normally incur a particular cost asked on the survey (for example, costs for providing employee benefits such as health insurance), please write N/A (not applicable) as the answer for that question. If you normally incur a particular cost but it happens to be zero for this year, enter a zero. If you incurred a cost but don't know the amount, record your best estimate or write D/K (don't know).

N/A or blank = you don't normally have that item as a cost.

Zero = normally incur but no cost this year.

D/K = Don't know what the cost was but there was a cost (estimate if you can).

THANK YOU FOR YOUR TIME AND EFFORT!

Identification and Business Information

Vessel identification number: _____ (should be hard coded)

Beginning of fiscal year corresponding to annual costs reported below. ____/____/____

End of fiscal year corresponding to annual costs reported below. ____/____/____

Is your business **incorporated**? Yes No (circle one)

Choose the **ownership type** that best describes your business (mark with an "X"):

Sole proprietorship _____ Partnership _____ Group/business ownership _____

If a partnership, please choose a **description of the partners' relationship**:

Relative in household _____ Non-relative in household _____ Other relative _____

Other friend _____ Business associate _____

Other _____ (enter description here _____)

Vessel Information

Brand name of engine. _____

Year engine was **built**. _____

Year engine was last **rebuilt**. _____

Engine **fuel type** (choose one): Diesel _____ Gasoline _____

Did you have this vessel built or did you purchase it from another owner?

Had it built _____ **Purchased from other owner** _____

Year vessel **purchased** from other owner. _____

Price of vessel if purchased or **cost** to you to build vessel. \$ _____

Market values

The following questions ask you to estimate what you could reasonably expect (not what you would like to receive) to sell various components of your vessel or what you might expect to pay to buy components of similar condition.

Market value of **hull**. \$ _____ Useful life remaining on **hull**. _____ yrs

Market value of **engine**. \$ _____ Useful life remaining on **engine**. _____ yrs

Fishing gear market value. \$ _____

Other gear (winches, generators, etc) market value. \$ _____

Electronics market value (include any gear mounted electronics). \$ _____

Safety equipment market value. \$ _____

Permits owned market value. \$ _____

Vessel market value (does not have to be the sum of all the components listed above - evaluate its value if you were to sell the entire vessel with all its equipment and gear). \$ _____

Additional question for this section:

Average daily value of catch in storage (example: lobsters in a pound) \$ _____

Annual Costs

Please record the costs of each of these items for the fiscal year you indicated above.

Vessel **insurance** costs (include hull, protection and indemnity (P&I), other property insurance, mortgage insurance, etc. **Do not include vessel owner health insurance or health insurance paid for crew/employees**). \$ _____

Cost of major vessel **overhaul and/or haul-out and vessel improvements**. \$ _____

Major vessel **overhaul/haul-out/improvement description**. _____

Typical number of years between major vessel haul-outs/overhauls or improvements. _____ yrs

Repair costs (do not include the costs reported above for vessel overhaul/haul-out/improvements. If you don't distinguish repairs from maintenance, record half the cost here and half the cost in the next question about maintenance costs). \$ _____

Maintenance costs (do not include the costs reported above for vessel overhaul/haul-out/improvements. If you don't distinguish repairs from maintenance, record half the cost here and half the cost in the previous question about repair costs). \$ _____

New gear costs (do not include the costs reported above for vessel overhaul/haul-out/improvements. Include cost of new fishing gear, vessel gear/equipment, electronics, etc. only if it was an entire additional or replacement unit). \$ _____

New gear description. _____

Mooring/dockage fees (include vessel security costs). \$ _____

Salary payments to non-share crew or other onshore employees (do not include baiting labor costs). \$ _____

Cost of providing **benefits** to crew/employees (example: your share of payments to health plans provided for your crew/employees). \$ _____

Taxes (income tax, business property tax, other business related taxes. Do not include fuel tax). \$ _____

Fishing permit fees. \$ _____

Other permit or license fees (export/import permit fees, license renewals, etc.). \$ _____

Business use of **vehicle and travel costs** (include cost to travel to Council meetings, etc). \$ _____

Professional fees (accounting, legal, bookkeeping). \$ _____

Association fees (fees paid to business related organizations, cooperatives, fisheries organizations, etc.). \$ _____

Onshore **processing/holding costs** (cold storage rental, pounding/carring fee, costs of any onshore processing of catch before it is sold). \$ _____

Cost to rent or own (mortgage payment) **onshore facilities** (example: storage shed). \$ _____

Onshore facilities description (list). _____

Business Financing

The following questions ask you to provide information about money you borrowed to finance your fishing operation.

Loan Description	Total Duration of Loan (yrs)	Remaining Duration of Loan (yrs)	Interest Rate	Monthly Payment	Source
_____	_____	_____	_____ %	\$ _____	_____
_____	_____	_____	_____ %	\$ _____	_____
_____	_____	_____	_____ %	\$ _____	_____
_____	_____	_____	_____ %	\$ _____	_____

TRIP COST SURVEY

YOUR VESSEL WAS RANDOMLY SELECTED TO PARTICIPATE IN A COMMERCIAL FISHING VESSEL TRIP COST SURVEY. YOU DO NOT HAVE TO REPORT COST INFORMATION FOR ALL OF YOUR TRIPS. YOU ARE BEING ASKED TO PROVIDE INFORMATION ONLY ABOUT YOUR MOST RECENT TRIP.

The information you provide will help to describe the economic characteristics of vessels similar to yours. Fisheries managers need this kind of information in order to make informed decisions that may ultimately affect your fishing business. Decisions are being made every day that may impact you. **Do you want those making these decisions to have accurate information about your fishing operation?**

Since you will probably only report cost information for a few of your fishing trips during a year (some years you may not be selected at all), the FIN will never know your entire costs for the year. Even if you participate in the Fixed Cost Survey, which you may also be randomly selected for, the FIN will not know what your total costs were for the year and so **will not know your profit**. Individual **vessel information will be kept confidential** and only reported in aggregate or by averages according to vessel types.

Instructions

This survey asks you to supply information, related to your operating costs for running a commercial fishing trip, for your most recent fishing trip. If records are unavailable for the most recent trip, for example settlement sheets have not been completed, fill out the survey for the most recent trip that records are available.

It is extremely important that the correct trip identification number and vessel number is used. This information will be used with the logbook information you provided at the end of the trip, information in the Vessel Registration System, and with state and federal permitting systems. Cost information is meaningless unless information about the length of trip, gear used, vessel characteristics, and permits owned is available. The trip and vessel identification numbers provide links to these other databases so that you don't have to provide that information in this survey.

If you don't normally incur a particular cost asked on the survey (for example, bait costs for a trawl vessel), please write N/A (not applicable) as the answer for that question. If you normally incur a particular cost but it happens to be zero for this trip, enter a zero. If you incurred a cost but don't know the amount, record your best estimate or write D/K (don't know).

N/A or blank = you don't normally have that item as a cost.

Zero = normally incur but no cost for this trip.

D/K = Don't know what the cost was but there was a cost (estimate if you can).

THANK YOU FOR YOUR TIME AND EFFORT!

Identification Information

Vessel identification number: _____ (should be hard coded)

Trip identification number: _____ (hard code? - we provide info on what trip we want?)

Was the owner the captain on this trip? Yes No (circle one)

Trip Costs

	<u>Cost this trip</u>	<u>Quantity used this trip</u>
Fuel	\$ _____	_____ gallons
Oil/lubrication	\$ _____	_____ quarts or gallons???????
Ice	\$ _____	_____ tons
Water	\$ _____	_____ gallons
Food	\$ _____	

Type of bait used _____

Bait costs (include any payment, outside of crew share, to labor. Example: labor payment to put bait on hooks or in traps) \$ _____

Cost, outside of crew share, to **grade, unload, or otherwise handle catch** \$ _____

Cost, outside of crew share, to **process fish onboard** (could include additional labor costs and related supplies) \$ _____

Cost to **transport** this trip's catch to market or buyer \$ _____

Cost of any **other supplies** bought and used for this trip (could include replacement hooks, twine, chains, shackles, knives, etc) \$ _____

Crew Payment Information

Choose one of the following methods (with an "X") describing the way your crew gets paid:

Share of value of catch _____ Per unit catch _____ Hourly rate _____
Daily rate _____ Trip rate _____

Fill out this section if you chose "share of value of catch":

Choose type of lay system:

Clear lay (Definition: percentage shares to crew and boat determined **before** trip expenses are deducted) _____

Broken lay (Definition: percentage shares to crew and boat determined **after** trip expenses are deducted) _____

Based on the type of lay system, enter the percent of gross receipts (if clear lay) or net receipts (if broken lay) that **goes to the boat** _____%

Based on the type of lay system, enter the percent of gross receipts (if clear lay) or net receipts (if broken lay) that **goes to the crew** (the entire crew, not per man) _____%

Based on the type of lay system, mark the **trip expenses** that are subtracted from either gross receipts (broken lay) or from the crew share (clear lay):

Fuel _____ Oil/lubrication _____ Bait _____ Ice _____ Water _____ Food _____
Other _____ Describe: _____
Other _____ Describe: _____
Other _____ Describe: _____

Choose how each of the following crew members are given bonuses by entering the following numbers: 1 = fixed amount per trip, 2 = % of gross receipts, 3 = % of boat share (before expenses), 4 = % of crew share (before expenses), 5 = other (describe here _____).

Then for each crew member, enter either their percent bonus or dollar amount.

	Bonus calculation type (use number from list above)	Percentage or dollar amount
Captain	_____	_____ % or \$
Engineer	_____	_____ % or \$
Cook	_____	_____ % or \$
Mate	_____	_____ % or \$

Fill out this section if you chose "per unit catch":

What is the **unit of volume** on which payment is based (choose one):

Pound _____ Hundred pounds _____ Thousand pounds _____
 Bushel/bucket/tote _____ Per fish _____ Other _____ (describe here _____)

If you chose bushel/bucket/tote, how many **pounds per unit**? _____ lbs

Crew member **payment per unit** \$ _____

Fill out this section if you chose hourly, daily, or trip rate:

Hourly rate per man \$ _____ or

Daily rate per man \$ _____ or

Trip rate per man \$ _____

If your type of lay system is different from any of the above, please describe

Regardless of the lay system, What was the **total amount paid to the crew, including the**

captain, on this trip? \$ _____

Describe any damage or loss to/of fishing gear, vessel equipment, engine, or vessel that occurred this trip. Include routine net repair.

Cost (or estimate) to repair damage \$ _____

ANNUAL OWNER/CAPTAIN/CREW SURVEY

YOUR VESSEL WAS RANDOMLY SELECTED TO PARTICIPATE IN A COMMERCIAL FISHING VESSEL ANNUAL OWNER/CAPTAIN/CREW SURVEY. YOU DO NOT HAVE TO REPORT INFORMATION FOR ALL OF YOUR TRIPS. YOU ARE BEING ASKED TO PROVIDE INFORMATION ONLY ABOUT YOUR MOST RECENT TRIP.

The information you provide will help to describe the owner/captain/crew characteristics of vessels similar to yours. Fisheries managers need this kind of information in order to make informed decisions that may ultimately affect your fishing business. Decisions are being made every day that may impact you. **Do you want those making these decisions to have accurate information about your fishing operation?**

Instructions

This survey is designed to be completed by the owner, captain, and each crew member of the vessel's most recent fishing trip.

It is extremely important that the correct trip identification number (trip start date) and vessel number is used. This information will be used with the logbook information you provided at the end of the trip, information in the Vessel Registration System, and with state and federal permitting systems. Owner/Captain/Crew information is meaningless unless information about the length of trip, gear used, vessel characteristics, and permits owned is available. The trip and vessel identification numbers provide links to these other databases so that you don't have to provide that information in this survey.

THANK YOU FOR YOUR TIME AND EFFORT!

Vessel identification number: _____

Trip identification number: _____

1. How do you classify yourself?

- | | |
|------------------|----------------|
| a) vessel owner | e) engineer |
| b) owner/captain | f) cook |
| c) captain | g) deckhand |
| d) mate | h) other _____ |

2. How old are you _____

3. What is (are) your ethnic background(s) _____

4. What language do you speak at home? _____

5. How well would you say you speak English?

- a) Not very well b) Pretty well c) Fluently

6. How well would you say you read English?

- a) Not very well b) Pretty well c) Fluently

7. What grade did you complete before leaving school?

1 2 3 4 5 6 7 8 9 10 11 12

Some post-secondary school but no degree

Completed Vocational School

Associate's Degree

Bachelor's Degree

Graduate or professional degree

8. Are you married? Yes---> Go to question 8a No---> Go to question 9

8a. Is your spouse involved in any aspect of the fishing industry?

Yes---> Go to question 8b No---> Go to question 9

8b. What fishing-related work does your spouse do?

9. How many adults live in your household right now? _____

Of these adults how many are primarily:

Employed outside the house _____ Full time students _____

Unemployed _____ Retired _____

Self-employed _____

10. Are you supporting any adults (for example, college students) who are not living in your household right now?

Yes -----> How many? _____ No

11. Are any of these adults who are not full time students taking classes of any kind for credit?

Yes ----> 11a No----> 12

11a. What are they studying? _____

12. How many children live in your household right now? _____

13. How would you categorize your general health?

a) excellent b) very good c) good d)not very good e) poor

14) Are you a member of any religion or religious organization?

Yes---> go to question 14a

No---> go to question 15

14a. Please circle all types of organization you are a member of.

a) local Catholic church

e) local non-denominational church

b) local Protestant church

f) other local religious organization

what organization _____

c) local Orthodox church

g) regional or national religious organization

d) local Jewish congregation

what organization _____

Do you consider yourself an active member of any of these organizations?

Yes-> Which letter or letters? _____

No

15) Do you belong to any fishing-related organizations?

Yes-> Go to question 15a

No

15a Which fishing organizations? _____

16? What percent of your household's annual income comes from the fishing industry? _____

17? What was your household's main source of income last

Spring _____

Summer _____

Fall _____

Winter _____

18. Have you ever worked outside the fishing industry?

Yes---> Go to question 18a No.

18a Please list the most important other jobs you have held

Job	Number of years you worked at this job
_____	_____
_____	_____
_____	_____

19. If you were not fishing, what do you think you would do for a living,?

20. Would you like to see your children go into fishing?

Yes No

**Port Samplers Meeting
Meeting Summary
Thursday, July 16 and Friday, July 17, 1998
Tampa, Florida**

Fisheries Information Network (FIN) Chairman, Joe Moran called the meeting to order at 8:40 a.m. The following were present:

Laura Baird, FDEP, Melbourne, FL
Rick Beaver, FDEP, Marathon, FL
Josh Bennett, NMFS, Miami, FL
Laura Bishop, NMFS, Galveston, Texas
Pamela Brown Eyo, NMFS, Miami, FL
Steve Brown, FDEP, St. Petersburg, FL
Lew Bullock, FDEP, St. Petersburg, FL
Guy Davenport, NMFS, Miami, FL
Claudia Dennis, NMFS, New Smyrna Beach, FL
Noel Estes, ADCNR, Dauphin Island, AL
Greg Fairclough, NMFS, Port Orange, FL
Ted Flowers, NMFS, Mobile, AL
Lisa Hallock, FDEP, Port Charlotte, FL
Tom Herbert, NMFS, Fort Myers, FL
Christine Johnson, MDMR, Biloxi, MS
Rene Labadens, Jr., NMFS, Pascagoula, MS
Ed Little, NMFS, Key West, FL
Anthony MacWhinnie, FDEP, Pensacola, FL
Joe Moran, SCDNR, Charleston, SC
Joe O'Hop, FDEP, St. Petersburg, FL
Barry Roberts, ADCNR, Gulf Shores, AL
Renee Roman, NMFS, St. Petersburg, FL
Charles Schaefer, NMFS, Tequesta, FL
Bryan Summerlin, FDEP, Cedar Key, FL
June Weeks, NMFS, Panama City Beach, FL
Robert Wiggers, SCDNR, Charleston, SC

Staff

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

Discussion of the Sampling Procedures, Methods, by Individual Organizations

R. Wiggers of South Carolina reported that he is the port agent based in Charleston, and he samples between 50 and 60 commercial boats, with 80% of his sampling done in one fish house. His maximum driving distance for sampling is two hours. Wiggers utilizes a wooden measuring board and a tape recorder and at later time transcribes the data on to the trip interview form and then

into the computer. South Carolina does not have a mandatory trip ticket system, however seven wholesale dealers are on a ticket system and those dealers are sampled through the TIP program. Some hard part sampling is done in cooperation with the Marine Research Institute.

L. Bishop of NMFS, Galveston reported for Georgia and explained that there is one dock with perhaps 6 boats where samples are collected. J. Califf is training one sampler who will handle the Georgia trip ticket system which will probably begin next year.

L. Baird, FDEP, Melbourne, Florida reported that she covers the area from Jacksonville to Stewart and travels about one and a half hours in either direction. Seventy five percent of the fishermen she samples are day-trip fishermen and most of the samples collected are inshore fish. She utilizes a wooden measuring board. Some hard parts are taken and those are sent to the Florida Marine Research Institute (FMRI) in St. Petersburg. Most the fish houses and fishermen are cooperative.

R. Beaver, FDEP, Marathon, Florida covers the Florida Keys from Key Largo to Key West. There are 98 registered wholesale dealers in this area, and 10 to 12 major fish houses are regularly sampled. Spiny lobster, stone crab, reef fish, pelagics, swordfish and shark are among the samples. The standard TIP format is used and whenever possible trip ticket numbers are recorded.

L. Hallock, FDEP, Port Charlotte, Florida covers the area from Cortez to Everglades City. Sampling is about eighty percent grouper and snapper, with most of the boats using longline or bandit rigs as their gear. Stone crabs are also sampled. She uses a measuring board and also weighs the fish. Most of the fish houses are cooperative. Some hard part sampling is done at the request of NMFS. There are approximately 10 to 12 fish houses, and some boats are at private docks.

B. Summerlin, FDEP, Cedar Key, Florida covers four counties, with travel time from five minutes to one hour. There are about 10 fish houses that are currently active, and two major fish houses that he deals with. He uses a measuring board. Most boats at this time are off shore grouper boats that go about 100 miles offshore. Approximately two weeks per month there is some fishing activity where sampling can be done. The other two weeks are used to work on TIP, cover new regulations, clean equipment, etc. Cooperation varies, with one fish house refusing to cooperate.

A. McWhinnie, FDEP, Pensacola, Florida covers four counties: Escambia, Santa Rosa, Okaloosa, and Walton Counties. He uses a measuring board and the scales at the fish houses. About eighty percent of the boats are offshore, and twenty percent inshore. Cooperation varies from one fish house to another, with some calling McWhinnie to advise where and when boats are arriving, and others being extremely uncooperative. Catch includes grouper and snapper, with 1700 pounds of vermillion snapper being landed recently.

L. Bullock, FDEP, St. Petersburg, Florida cover the area from Tampa to Madeira Beach. He covers four fish houses which are fairly close by, and a few others which are a longer distance. Most catches are red grouper and gag grouper. Bullock was involved in writing a paper on black grouper which should be available in a few months.

C. Dennis, NMFS, New Smyrna Beach, Florida covers the area from Jacksonville to Cape Canaveral. Dealers are called in the morning and those with boats in are sampled. A measuring board and tape recorder are used, and some hard part sampling is done. Most samples are sent to the Beaufort Lab from the east coast Florida, and to the Panama City Lab from the gulf coast of Florida. Otolith envelopes are marked with trip interview number, species and length.

C. Schaefer, NMFS, Tequesta, Florida covers an area from 1 ½ hours north to Sebastian to Palm Beach County. There are seven wholesale dealers in his the area. Boats with VHF radios and cell phones sometimes call in with information. Hard part sampling is done, as well as determining sex, and length. Otoliths are placed in a ziplock bag, sex and length are written on the bag with waterproof ink. A standard punch board is used and a measuring board. Otolith samples of snapper/grouper are sent to Beaufort Lab, others are sent to Panama City Lab.

P. Eyo, NMFS, Miami, Florida covers Broward, Dade, and upper Monroe counties. Monroe county has two dealers. When dealing with the larger of the two, which is a fish house, measurements are taken before fish are put in cooler. Effort information is collected from the fisherman when possible. There is limited cooperation from this dealer. The other dealer in Monroe county is a restaurant, and all fish are purchased from two fishermen in the Keys. In Dade county the dealer buys direct from fishermen, and when possible information is collected on the day the boats arrive. Occasionally there are split landings.

E. Little, NMFS, Key West, Florida. Approximately 1/3 of time is spent with shrimp landings, 1/3 is spent working on data base projects, and 1/3 is spent on TIP. The time spent on TIP is 2/3 length/frequency sampling and 1/3 on hard part sampling. There are 10 major dealers in the area. Some spiny lobster and golden crab are sampled. Little and R. Beaver of FDEP have overlapping areas, however they have worked out a system and there is no duplication of effort.

T. Herbert, NMFS, Fort Myers, Florida divides his duties between TIP sampling, the gulf shrimp system, etc. Herbert and L. Hallock of FDEP have divided their common area, with Herbert concentrating on Collier County from Naples to Everglades City. Grouper, king mackerel, Spanish mackerel, etc. are sampled, and can be caught using longline, bandit rigs, or trap boats. Dealers are very cooperative. Depending on time constraints and the size of the catch, the whole catch can be measured, or a sampling. Length/frequency measurements are taken and weights. Hard parts, based on priority list, are taken and sent to Panama City Lab. Recently there has been success with some fishermen using numbered tags for fish, and placing gonads in a plastic bag marked with corresponding number. Otoliths are taken when the boat arrives and placed in the plastic bag with the gonads.

R. Roman, NMFS, St. Petersburg, Florida covers Wakulla, Pasco, Hillsborough, and Pinellas counties. Any overlap with FDEP port samplers has been worked out and there is no duplication. TIP data, gulf shrimp system, etc. are covered. Roman deals directly with the fishermen, with one boat being from the Caribbean. Otoliths are taken within time constraints.

J. Weeks, NMFS, Panama City Beach, Florida is a new port agent and has been told that her duties will include using the measuring board, information is recorded on paper, then taken to the lab and transposed to the TIP report. There will also be some work with recreational charter boat fishermen.

T. Flowers, NMFS, Mobile, Alabama reported that he travels into the Florida panhandle about once a month to collect shrimp data, and if there is any available, he will sample red snapper. During red snapper season, sampling is more frequent. In Alabama there is no overlap with state agents, however a close relationship exists, and there is no interference.

B. Roberts, ADCNR, Gulf Shores, Alabama reports on 3 to 4 dealers, and of the time he spends on statistics, approximately 50% is spent on TIP. Time spent collecting TIP data represents a small part of his responsibilities. Roberts works primarily with dealers, but their rapport with fishermen is good, so that data is very complete.

Noel Estes, ADCNR, Dauphin Island, Alabama has 4 fish houses she visits 2 to 3 times per week. During roe mullet season, from October to December, there a 3 additional fish houses sampled. Dealers and fishermen are very cooperative.

R. Labadens, NMFS, Pascagoula, Mississippi reported that there is one major dealer in Jackson County and that is the responsibility of the NMFS. His primary duties involve data collection. Length/frequency and weight are collected during red snapper season. There is a cooperative agreement with the Mississippi Department of Marine Resources in Biloxi.

C. Johnson, MDMR, Biloxi, Mississippi covers the areas of Harrison and Hancock Counties and the MDMR is responsible for data collection in those counties. There is good rapport with the NMFS sampler and overlap is not a problem.

There was discussion on the subject of illegal product and what criteria are used in determining what, if anything, should be reported. The general consensus was that the port agents job is to collect biological information, and not enforcement. If a port agent becomes known for being involved in enforcement activity, any cooperation on the part of the fisherman/dealer disappears. G. Davenport stated that if NMFS enforcement asks to see data, it must be provided. They are also able to review TIP data set for enforcement purposes, however to date, this has not occurred. J. Moran noted that a citation could not be written as a result of information gleaned from data. As a rule, complaints are usually made by dealers. When this occurs, the name and phone number of the enforcement agency responsible is given to that party, and they proceed from there. It was agreed by those present that the vast majority of dealers are honest.

Discussion of Sampling Protocols, Guidelines, etc.

D. Donaldson gave an overview of the Fisheries Information Network (FIN) which is comprised of the Recreational Fisheries Information Network (RecFIN{SE}) and the Commercial Fisheries Information Network (ComFIN). The mission is to cooperatively collect, manage, and disseminate marine commercial and recreational data for the betterment of the fisheries resources in the southeast region. There is a similar program on the east coast, the Atlantic Coastal Cooperative Statistics Program (ACCSP), and on the west coast, Pacific RecFIN and the Pacific Fisheries Information Network (PacFIN). The four major goals of FIN are to plan, manage, and evaluate the program; to implement the program; to establish and maintain a data management system for the program; and to support the development of a national program. One of the goals of the ComFIN program is to have a mandatory trip ticket system. Modules for this program are currently being developed and include effort, biostatistical, social/economic, and bycatch information.

J. Bennett explained the types of trips to sample. There are priority species which the National Marine Fisheries Service (NMFS) has assigned and there are target numbers which are general guidelines. These numbers were derived from hard part sample requests from assessment scientists. ***L. Bishop noted that the target numbers are not being met and perhaps these numbers should be revisited and adjusted.*** Agents are informed of landings in their area, and they in turn can select dealers to target. There is a list of dealers handling over 50,000 pounds of priority species, however this list is outdated and a more current list of dealers will be compiled. Interviews should be trip oriented when possible, however at times dealer samples are necessary. Effort information should be collected when possible. The goal is trip based effort and trip based sampling, and gear type should be sampled when possible. When quotas have been reached for priority species age/length samples and length/frequency samples, then other species are sampled. The Oracle system is being used to get feedback to agents and by accessing this system, agents can determine the status of sampling. J. Moran suggested that ***agents contact their state data coordinators to be authorized to use Oracle system.*** The SEFHost has had some problems and faxed reports will be issued on a regular basis. J. Bennett noted that ***one of the objects of ComFIN is to have all agencies submit their sampling requirements, then those will be coordinated among the various agencies.*** There also needs to be a plan for the random sampling of fish for the TIP database. One suggested method is to take one out of every five fish for sampling. This method may avoid bias in the sampling. If random samples are not used, this needs to be noted.

Bennett noted that the trip ticket number, if available, should be used for the interview. This information is not currently being batched out, but will be in the future. J. Moran noted that the TIP program was originally designed as a length/frequency data collection program. Later it was expanded to include effort, otoliths, gonads, etc.

Verification of data is another issue that must be addressed. Bennett noted that one method is to send fishermen periodic reports on the information that they have submitted which could then be reviewed and verified. Another method would be to use the TIP data to verify the trip ticket data or the log book data. This would free agents to collect more biological data and some duplication would be avoided. J. Moran noted the importance of meeting deadlines, and timeliness of data. J. Bennett stressed the need for correct sampling techniques in taking percentages from each market category according to the percentage that was landed. ***Lengthy discussion followed concerning the problem of counting fish in a large catch. J. Moran requested that meeting attendees consider the subject, check with experts in this field, and send their ideas to J. Bennett.***

Overview of Data Transfer

J. Bennett reviewed the TIP form including interview number, target fishery, fishing mode, sampler letter code, date, reporting area, sampling site, reporting period, information source, trip type, time of data collection, interview type, landing type, crew size, total effort - days out, days fished, termination, vessel information, gear codes, hours fished, area fished, and depth range. This form is intended to be used as an easy to understand record, however agents are not required to keep a hard copy. ***J. O'Hop requested that all Florida DEP agents use this form.***

J. Bennett explained the standard procedure for batching out data. It is being batched out to either a diskette or a file, then the file is transmitted by e-mail or the diskette is sent through the mail. ***The ideal method is to batch out every month separately and everyone is requested to do so.*** When the data are batched out they are converted from an alpha code to a numeric code and this is how it resides on the system. J. O'Hop noted that FDEP has put in a requisition for Visual dBASE.

Data validation is being done on batch out. Some states edit their own data and this is another form of validation. Another level of validation is when data goes on SEFHost. Data are finally evaluated by assessment scientists. L. Bishop noted that when everyone submits data on a monthly basis, if there are problems with the data, they can be addressed immediately.

J. Bennett explained that he does the editing on the SEFHost data. A method is being developed for passing the editing information back. Presently it can be done through the warning reports and these can be transmitted.

L. Bishop explained that the memo field was originally set up to allow samplers to enter any unique information about a particular trip. This information does not get batched out since it is not numeric data, therefore most agents write these notes as hard copy. J. Bennett stated that this feature could be added to the Oracle system and then could be batched out and related back for the assessment scientists' use.

J. Bennett next addressed the issue of new codes. There was lengthy discussion on the use of millimeters vs centimeters in measuring. ***The group agreed that either millimeters or centimeters could be used, as long as it is clearly indicated by code which is being used. No inches will be used.*** J. Moran noted that the RecFIN(SE), ComFIN, and the ACCSP are examining code lists in an effort to standardize codes. L. Bishop stated that the NMFS and GSMFC have produced an operations manual for the SEAMAP program and it includes a length/frequency code table. J. Bennett will discuss this subject with assessment scientists, as well as the need for new codes. If any agents have a request for a new code, submit them to Bennett and he will review these requests with TIP personnel. New codes will be batched out via e-mail. There have been requests for standardized length measurements. ***Since there are various ways to measure total length, this group has agreed to recommend to the FIN Committee that measurement for whole finfish be fork length.***

Discussion of Individual Data Elements

L. Bishop stated that the TIP manual is being revised to go with the new 3.4 version of the TIP program. She requested that any fields not used, or the need for additional fields should be noted at this time.

Section I - Interview and Trip Information

The state code will be the same, therefore only the interview number needs to be written. ***Any new samplers need to notify J. Bennett for a duty station code.*** Bishop noted that agents need to be aware that by adding a new interview, even if no data is entered, there is an interview number assigned and it is necessary to delete these records manually.

The target fishery code is used for feedback to port agents.

There will be a change in the reporting area, where fish are landed in one state and sampled in another. ***Since there is no field for state code when the fish are landed in one state and sampled in another, the following will be used. The code for reporting area will be 00 for the county, and in the zip code field, the 2 digit county code plus the 3 digit fips code which correspond to that county will be used (page 38 in TIP manual).*** The remaining fields will be for the state where sample is being conducted. There was lengthy discussion on the problem of fish landed in one state and transported to another state and which agent is responsible for measurements. ***Agents agreed to complete the interview, then attempt to contact the other state's port agent. In the event that agent has also done an interview, it would be discarded.*** D. Donaldson noted that this will not be a problem when the ACCSP and RecFIN/ComFIN are implemented since the trip ticket system will be used.

Reporting period will be day of departure, day of landing. If this information cannot be determined, agents will tab over it and program will fill in interview date. J. Bennett noted that when the trip ticket number is available it should be used.

Information source is whether sampling information is from a log book, dealer records, or from the captain or crew. The code for electronic measuring board is specifically for a project conducted at the Panama City Lab.

For trip type, agents should attempt to choose one of the major gear types to indicate the primary type of fishing trip sampled. ***Alabama has some spear/gig trips and requests that a code be added.***

The field for time of data collection is in reference to interview time and is not mandatory.

The bias type is trip specific and is used for tournament type interviews where only larger fish are being sampled. There is a new code for agents doing mullet sampling.

Crew size is the number of crew, including the captain, who fished for most of the trip including individuals who fished part of the time.

Total effort for multiple day trips should be recorded using whole numbers as the day the boat left the dock and the day it returned. If it is a single day trip then trip should be recorded using tenth of a day system. Do not use decimals - round up.

Termination of trip will change to number 1 - Normal, and number 2 - Other. Number 2 will have a field for explanation. Number 0 will remain Unknown.

Vessel information includes vessel i.d., vessel length, and the vessel name. Vessel name does not get batched out therefore vessel i.d. is very important. Do not use spaces or hyphens between letters and numbers. Do not write in DO prefix on Coast Guard vessel i.d. numbers.

Section II - Fishing Activity

Specific gear codes, such as type of trawl, type of handline, etc. should be used.

Number of sets will change to number, and number of gear will change to quantity. In the 3.2 version there was a mistake in the longline gear effort. The number field should be the number of miles per set. The quantity field should be the number of hooks per mile. The gear descriptor field should be the number of sets per trip. If any agents have been doing this differently, please notify J. Bennett. Traps should be the total number of traps pulled per trip.

Soak time is the actual time the gear is actively fishing in the water.

There are four different area types in TIP. (1) The distance from shore, (2) the Gulf grid system (2 digit shrimp system), (3) the South Atlantic grid system (3 digit shrimp system), and (4) the statistical grid codes (60 mile square grid codes). For each type recorded, the area prefix should be used.

Minimum depth range should be recorded in the first field, and maximum depth range in the second field. If only one depth, record it in the first field. If it is a bottom depth, the same number can be used in both fields. Longline depths should be recorded as the depth of the water.

Section III - Landings Composition

If an agent has sampled a fish that does not appear on the trip ticket, that has not been identified, or if it has been misidentified, use the zero replicate. If there is more than one species, a replicate number will have to be reassigned. There was lengthy discussion on this subject by attendees. ***E. Little and R. Beaver agreed to work on this problem with J. Bennett and will notify samplers of the results.***

If there is a trip ticket that lists a particular species under a broad heading such as grouper or snapper, that replicate number can continue to be used in Section IV and V if there is more detail indicated on that specific species of fish unless there are weights.

Section IV - Sampling Information

L. Bishop noted that recently there have been a large number of subsamples in the data. It was suggested that when possible, agents should set entire sample aside prior to sampling. Agents noted that at times it is difficult to operate in this manner. There are problems in instances where trip ticket species are grouped together and recorded; where landings are reported already sorted when agents did the sampling before the catches were sorted; where species are left off the trip ticket; and where species are misidentified. ***E. Little and R. Beaver will work on this with J. Bennett and try to resolve the issue.*** There is another situation unique to South Carolina where two market categories are being used. ***J. Moran will contact Little and Beaver to resolve this problem.***

Section V - Bioprofile Data

L. Bishop reported that there are some new codes that have been added for stone crab measurements.

Since it was agreed earlier in this meeting that fork length would be used for measurement of whole finfish, many of the codes for length type can be eliminated.

Port agents were asked to check the list beginning on page 42 of the TIP manual to ascertain the accuracy of names, addresses, etc. If there are any omissions or errors, contact J. Bennett.

GSMFC staff will compile and mail a list of attendees.

Other Business

J. Moran noted that the ComFIN Committee had been wanting to conduct a meeting of port agents for quite some time and felt that this would be worthwhile experience. Agents agreed that the meeting had been very beneficial and would support future meeting.

There was lengthy discussion on the trip ticket system, with agents expressing some concern. This meeting has resulted in agreement to make changes and revisions in several different areas. D. Donaldson noted that funds can be budgeted for future meetings of port agents perhaps on an annual basis. Donaldson noted the importance of feedback from port agents to address problems and items of interest for discussion at future meetings. R. Beaver noted the need for port agents to be kept informed of changes and new programs. Agents were requested to give concerns and specific questions regarding the program to J. Bennett.

There was discussion of the shark workshop and methods of measurement. J. Moran stated that the shark workshop was held to interject the TIP program into stock assessment. J. Bennett noted that in the quota system there is a large amount of unclassified sharks and an attempt is being made to place these sharks in the proper species group. In order to define these, the help of observers and agents is needed. A standard system of measurement will be forthcoming.

Port agents requested workshops on identification of juvenile jacks, technological advances, and timely legal and regulatory information for fishermen. It was suggested that the fishery management councils formulate a method to get information and updates to port agents in a timely manner. There was discussion on law enforcement in the statistics programs, ways to have officers visit fish houses for inspection, and the problems of funding and the directing these activities.

J. Bennett will coordinate sampler supply. Anyone having questions with sampling techniques, or interested in a sampling demonstrations should contact Bennett. Bennett will also summarize changes as a result of this meeting and mail to port samplers.

R. Labadens questioned the measurement of certain species using fork length when there is a minimum size requirement.

GSMFC staff will mail meeting roster and draft minutes to attendees.

All changes to this program will be instituted beginning August 1, 1998.

The meeting was adjourned at 11:30 a.m.

Blue Crab Technical Task Force (TTF)
MINUTES
August 4-7, 1998
New Orleans, Louisiana

Chairman Vince Guillory called the meeting to order at 1:45 p.m. on Tuesday, August 4, 1998. The following members and others were present:

Members

Vince Guillory, *Chairman*, LDWF, Baton Rouge, LA
Bruce Buckson, FDEP, Tallahassee, FL
Ed Holder, Outdoor Editor, Groves, TX
Traci Floyd, MDMR, Biloxi, MS
Charles Moss, *proxy for E. McCulla*, Lake Jackson, TX
Butch Pellegrin, NMFS, Pascagoula, MS
Harriet Perry, GCRL, Ocean Springs, MS
John Petterson, IAI, La Jolla, CA
Phil Steele, FDEP/FMRI, 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 group agreed to focus on sections 9, 10, 11 under agenda item 6. The habitat, biological, and economic sections will be handled via mail. With this clarification, P. Steele moved to adopt the agenda as presented. H. Perry seconded the motion which passed without objection.

Adoption of Minutes

The minutes of the May 27-30, 1998 meeting in Marathon, Florida, were reviewed, and by consensus, the minutes were approved as written.

Revision Progress

General Notes. A glossary will be included in the document. All task force members are asked to check their sections for those terms in need of definition. Fisheries Management for Fishermen has an excellent glossary; GSMFC staff will distribute this document to the task force.

All agreed that the document will not be finalized in time to present to the Technical Coordinating Committee in October 1998. The group anticipates finalization in early 1999 and presentation to the TCC in March 1999.

Stock Assessment - B. Pellegrin presented an update on the stock assessment for blue crab in the Gulf of Mexico. The assessment procedure includes landings history, annual indices of relative abundance, mortality estimates (length based estimates of total mortality, convention of the International Council for the Exploration of the Sea for estimating total natural mortality, fishing mortality = total-natural), exploitation rates, and total mortality based on surplus production model. Results were summarized thus far, by state:

Florida

- Significantly decreasing long term trend in landings, nearly significant short term trend ($p=0.0834$)
- No significant long nor short term trends in estimates of relative abundance
- No significant long nor short term trends in estimates of total mortality
- No significant long nor short term trends in estimates of exploitation rates
- Sustainable yield is optimized when $E \approx 0.5$ (last 5 years; $E=0.576, 0.588, 0.503, 0.544,$ and 0.572)
- Estimated MSY is 7.5 million pounds (last 5 years; 7.6, 8.5, 8.5, 8.7, and 12.5)
- $F_{MSY} = Z_{MSY} - M_{model} = 1.068-0.705$ or 0.363
- $F_{MSY} = Z_{MSY} - M = 1.068-0.5$ or 0.568
- F for last 5 years; 0.678, 0.712, 0.506, 0.598, and 0.669

Alabama

- Significantly increasing long term trend in landings, no significant short term trend
- No significant long nor short term trends in estimates of relative abundance
- No significant long nor short term trends in estimates of total mortality
- No significant long nor short term trends in estimated exploitation rates
- Sustainable yield is optimized when $E \approx 0.5$ (last 5 years; $E=0.550, 0.552, 0.511, 0.552,$ and 0.591)
- Estimated MSY is 2.8 million pounds (last 5 years; 3.6, 2.5, 2.7, 2.5, and 3.2)
- $F_{MSY} = Z_{MSY} - M_{model} = 1.130-0.802$ or 0.310
- $F_{MSY} = Z_{MSY} - M = 1.130-0.500$ or 0.630
- F for last 5 years; 0.610, 0.617, 0.523, 0.616, and 0.721

Mississippi

- Significantly decreasing long term trend in landings, no short term trend
- Significantly decreasing long term trend in estimates of relative abundance, significantly increasing short term trend
- No long term trend in estimates of total mortality, significantly decreasing short term trend
- No long term trend in estimated exploitation rates, significantly decreasing short term trend
- Sustainable yield is optimized when $E \approx 0.5$ (last 5 years; 0.600, 0.550, 0.495, 0.487, and 0.489)
- Estimated MSY = 1.3 million pounds (last 5 years; 0.4, 0.3, 0.2, 0.3, and 0.4)
- $F_{MSY} = Z_{MSY} - M_{model} = 1.392-0.455$ or 0.937
- $F_{MSY} = Z_{MSY} - M = 1.392-0.5$ or 0.892
- F for last 5 years; 0.747, 0.612, 0.490, 0.475, and 0.478

Louisiana

- Significantly increasing long term trend in landings, no short term trend
- Significantly increasing long term trend in estimates of relative abundance, no short term trend
- Significantly increasing long term trend in total mortality estimates, no short term trend
- Significantly increasing long term trend in estimated exploitation rates, no short term trend
- Sustainable yield is optimized when $E \approx 0.5$ (last 5 years; $E=0.635, 0.658, 0.682, 0.659,$ and 0.657)
- Estimated maximum sustainable yield is 42.8 million pounds (last 5 years; 52.0, 45.9, 36.8, 37.0, and 40.0)
- $F_{MSY} = Z_{MSY} - M_{model} = 1.625 - 0.731$ or 0.894
- $F_{MSY} = Z_{MSY} - M = 1.625 - 0.500$ or 1.125
- F for last 5 years; $0.872, 0.960, 1.072, 0.965,$ and 0.960

Texas

- Significantly increasing long term trend in landings, no significant short term trend
- Significantly increasing long term trend in total mortality estimates, no short term trend
- Significantly increasing long term trend in estimated exploitation rates, no short term trend
- Sustainable yield is optimized when $E \approx 0.5$ (last 5 years; $0.573, 0.545, 0.577, 0.582,$ and 0.590)
- Estimated MSY is 7.1 million pounds (last 5 years; 6.2, 8.3, 5.1, 5.4, and 6.3)
- $F_{MSY} = Z_{MSY} - M_{model} = 1.166 - 0.919$ or 0.147
- $F_{MSY} = Z_{MSY} - M = 1.166 - 0.500$ or 0.666
- F for last 5 years; $0.670, 0.600, 0.681, 0.696,$ and 0.720

Several questions were raised by the group including, given the spawner-recruit relationship, can MSY apply to the crab stock? Since their fisheries dependent data is so poor, how realistic is the stock assessment based upon those numbers? Another member requested background for the assumptions made within the stock assessment be provided to the group. Any literature on the use of MSY in decapod fisheries would also be useful. The group commended B. Pellegrin on his work thus far. He agreed to draft the stock assessment section for incorporation into the plan by the October meeting. The group will be provided with a copy of his presentation by the GSMFC staff.

Sociological Section - Dr John Petterson reported on the progress of the blue crab sociocultural survey. As an example of the answers received, Dr. Petterson compiled all the answers from Louisiana to the question, "If you were in charge of blue crab management in your state, what changes would you recommend?" Answers included limiting entry, limited catch, banning imports, limiting the number of traps, and nonpolitical management.

Dr. Petterson outlined the issues and content for the sociological section. Additional sociocultural information (i.e., values, beliefs, ethnic relations, etc.) will be added as a product of the telephone protocol which will follow preliminary analysis of survey results. The draft outline for this section follows:

- I. Demographics
 - A. Age
 - B. Ethnicity
 - C. Marital Status
 - D. Education
 - E. Residence patterns/principal landing areas.
- II. Blue Crab Fishery Experience
 - A. Years Fishing
 - B. Source of Introduction to the Fishery
 - C. Social Involvement in the Fishery (family/friends/relatives)
 - D. Occupational Satisfaction
 - E. Technology
 - 1. Vessel Size
 - 2. Gear Usage
 - F. Income and Expenditure Distribution
 - 1. Percentage from Fishing
 - 2. Percentage of Fishing Income Received from Crabbing
 - 3. Percentage of Fishing Expenditures by Category
 - G. Fishing and Marketing Patterns
 - 1. By Month
 - 2. Frequency by Season
 - 3. Sales by Category (dealers, restaurants)
- III. Fisherman Concerns
 - A. Environmental Conditions
 - B. Commercial/Economic Conditions
 - C. Sources of Conflict
 - 1. Commercial Crabbers
 - 2. Other Fishermen
 - 3. Recreational Users
 - D. Regulatory and Enforcement
- IV. Fisherman Recommended Changes
 - A. Analysis of statements in response to the final question, "what changes would you recommend?"

Dr. Petterson also provided return statistics to date:

BASIC SURVEY STATISTICS				
State	Total Population/ Records (est.)	Total Mailed	Total Received	Return Rate Mailed/ Received
Louisiana	2,550	2,480	574	23%
Alabama	350	325	49	15%
Texas	553	540	115	21%

Florida	715	700	261	37%
Mississippi	119	110	24	22%
Totals	4,287	4,115	1,023	25%

The exact number of surveys actually distributed is not final (returned letters are still being received and counted). This will lower the total "mailed out" and raise the return rate. A not insignificant number of respondents (perhaps between 3%-5%) returned the survey uncompleted indicating that they had not fished in "many" years. If these individuals are treated as non-fishermen, their surveys would be subtracted from the total mail out as well. This would also increase the return rate.

Dr. Petterson noted that during the presurvey he had very poor response from the key informants. For the follow up phone survey, he may contact those people who put their name on the returned surveys. There is an ethical question in doing this, because respondents were told their information would be confidential. However, some respondents volunteered their names. The task force offered the following questions for the follow up phone survey:

- What do the crabbers think of the accuracy of reported commercial landings?
- Do crabbers have any idea what the impact of the recreational fishery is? What is the relative harvest of the recreational fishery? Does it approach the commercial fishery or is it much less?
- Do the fishermen have any sense of loyalty to particular picking houses.

Economic Section - S. VanderKooy spoke with Walter Keithly who indicated a draft of the economics section will be available in mid-September. The task force asked S. VanderKooy and V. Guillory to encourage Dr. Keithly to attend the next meeting to discuss and receive comments on the draft.

Habitat Section - P. Steele reported that the section was approximately 50% complete. He asked for input from all and asked the state representatives to provide input on those sections in bold. Each state needs to update the percent contribution by water body.

Laws and Regulations - T. Wagner asked each state representative to review the respective state's information for correctness. He still lacks information for Alabama. An updated table 5.2 (summary of Gulf States' blue crab regulations) was distributed for review and comment.

Fisheries Section - V. Guillory asked for all comments so that he can have a revised section for the October meeting. Landings and value for the hard and soft crab fishery are needed to revise through 1997.

Management Recommendations - V. Guillory distributed draft management recommendations for review and comments. Each task force member is asked to send comments so the section can be revised by October.

Regional Research Priorities and Data Requirements - The draft from Marathon was printed and distributed for review and comments. Each task force member is asked to send additions and comments so the section can be revised by October.

Mortality Symposium

The symposium on blue crab mortalities will be held on Saturday, May 29, 1999, at the annual meeting of the Crustacean Society at Lafayette, Louisiana. A peer-reviewed proceedings of the blue crab mortality symposium will be published by the GSMFC. Invited and contributed papers based on oral or poster presentation will be considered for publication. Two speakers will be invited. Ken Heck will present on natural mortality associated with predator/prey, and Marius Brouwer will present on environmental factors associated with mortality. T. Wagner may present on shrimp trawl bycatch mortality. B. Pellegrin may present on the estimate of natural mortality. V. Guillory and S. VanderKooy will work on a budget to present to the TCC and Commission in October. This budget will include travel costs and registration fees to the Crustacean Society meeting for the task force members and two speakers, meeting room costs (rent, set up fees, audio/visual equipment), and publication costs for the proceedings.

Next Meeting

The next meeting of the Blue Crab TTF will be a joint session with the TCC Crab Subcommittee during the GSMFC 49th Annual Meeting in San Antonio, Texas. The session will begin Monday, October 12 at 1:00 p.m.; recess at 5:00 p.m.; reconvene Tuesday, October 13 at 8:30 a.m.; and adjourn at 12:00 noon. A meeting to edit the entire document was tentatively scheduled for January-February 1999.

Other Business

P. Steele reported on the moratorium in Florida. The FMFC staff economist will conduct a series of workshops around the state for input on limited entry in the blue crab fishery. He asked that this group provide testimony at public meetings on their experiences in the other states. In addition to state agency personnel, industry and law enforcement representatives will also provide testimony and the affect of limited entry on these sectors of the fishery.

H. Perry & T. Floyd formally invited Vince Guillory to attend the next Mississippi Crab Task Force meeting to discuss escape rings.

There being no further business, the meeting adjourned Friday, August 7, 1998, at 12:00 noon.

SEAMAP - GULF, SOUTH ATLANTIC
AND CARIBBEAN SUBCOMMITTEES
JOINT MINUTES
Lajas, Puerto Rico
August 7, 1998

APPROVED BY: 
COMMITTEE CHAIRMAN

Chairman Richard Waller called the meeting to order at 1:08 p.m. The following members and others were present:

Richard Waller, USM/IMS/GCRL, Ocean Springs, MS
Steve Heath, ADCNR/MRD, Gulf Shores, AL
David Whitaker, SCDNR, Charleston, SC
Joanne Lyczkowski-Shultz, NMFS, Pascagoula, MS
Geoff White, ASMFC, Washington, DC
Alan Huff, FDEP, St. Petersburg, FL
Mike Street, NCDMR, Moorehead, NC
Henry Ansley, GDNR, Brunswick, GA
David Donaldson, GSMFC, Ocean Springs, MS
Lynne Hinkey, UPR Sea Grant Program, Mayaguez, PR
Richard Appeldourn, UPRDMS, Mayaguez, PR
José Rivera, NMFS, Boguerón, PR
Michelle Kasprzak, LDWF, Baton Rouge, LA
Scott Nichols, NMFS, Pascagoula, MS
Richard Leard, GMFMC, Tampa, FL
James Hanifen, LDWF, Baton Rouge, LA
Kim Williams, FMRI, St. Petersburg, FL
Jeff Rester, GSMFC, Ocean Springs, MS
Aida Rosario, FRL/DNER-PR, Mayaguez, PR
Terry Cody, TPWD, Rockport, TX
Sheri Caseau, DPNR/DFW, St. Thomas, USVI
Cynthia Pierce, NMFS, St. Petersburg, FL
Alvin Newton, USFWS, St. Croix, USVI
William Tobias, St. Croix, USVI

Adoption of Agenda

Under "Other Business" Cynthia Pierce will give a brief presentation on grants management. With that change, the agenda was approved.

Approval of Minutes

J. Shultz asked to delete Texas ~~under~~ ^{from the list of} participants of the ichthyoplankton survey. **J. Hanifen moved to accept the minutes with this change.** J. Shultz seconded it and it passed unanimously.

Overview of SEAMAP-Caribbean

A. Rosario reported the Virgin Islands started the bottom mapping survey in June and Puerto Rico will start after the Virgin Islands are through because they have to share the equipment (side scan sonar) and software. The purpose of this survey is to determine the substrate types at the

different SEAMAP sampling stations. Puerto Rico has finished approximately 90% of the reef fish survey and they feel they are going in the right direction.

Overview of SEAMAP-Gulf

R. Waller stated that the 1996 atlas has been distributed and the 1997 atlas will be finished soon. The 1997 Annual Report to the GSMFC TCC Subcommittee and the 1998 Marine directory were also completed and distributed.

The Fall Plankton Survey was conducted from September 3 through October 4, 1997 and approximately 180 stations were sampled. The purpose of the survey is to assess the abundance and distribution of king mackerel and red drum eggs and larvae in the Gulf of Mexico. Vessels from NMFS, Florida, Alabama, Mississippi and Louisiana participated in the survey.

The 1997 Fall Shrimp/Groundfish Survey was conducted in October through December. Approximately 350 trawl stations from the Alabama/Florida line to Brownsville, Texas were sampled and plankton samples were taken also. Alabama, Mississippi, Louisiana, Texas and NMFS participated in the survey. The purpose of the survey is to determine abundance and distribution of demersal organisms in the Gulf of Mexico. Vessels from NMFS, Louisiana, Mississippi, Alabama and Texas participated in the survey.

The 1998 Spring Ichthyoplankton Survey was conducted in April/May and 180 stations were sampled for blue fin tuna eggs and larvae. This survey takes place from Key West, Florida to Brownsville, Texas. Florida and NMFS participated in the survey.

The 1998 Summer Shrimp/Groundfish Survey was conducted in June and July. Vessels from NMFS, Louisiana, Mississippi, Alabama and Texas participated sampling 315 stations. The purpose of the survey is to determine abundance and distribution of demersal organisms in the Gulf of Mexico.

The Environmental Work Group met via conference call in February to discuss Chlorophyll collections and then met in New Orleans in April to finish the draft report. The Red Drum Work group also met via conference call to discuss the NMFS tag and recapture study.

Overview of SEAMAP-South Atlantic

D. Whitaker, Vice Chairman, stated he will be chairman this coming year and H. Ansley will be Vice Chairman. He reported the Bottom Mapping Work Group met May 21-22, 1998 in St. Petersburg, Florida. Topics discussed included a review of the South Atlantic Bight Hardbottom Mapping CD-ROM, Internet access to the data, and development of future initiatives for the Work Group. The Shallow Water Trawl and Crustacean Work Groups met in June for the first time in four years.

The Annual SEAMAP Report and 7th Annual Report on Shallow Water Trawling were distributed. The Hard Bottom Mapping data is now available on CD-ROM and a preliminary distribution has been completed. The Crustacean Newsletter will be distributed later this year.

The Pamlico Sound Survey and Winter Tagging Cruise in North Carolina are ongoing with no cost to SEAMAP but both Surveys are under the SEAMAP program. The Shallow Nearshore Water Trawl Survey was conducted from Cape Hatteras, NC to Cape Canaveral, Florida in the spring, summer and fall and 78 stations were sampled. This survey is in its 10th year and a 10 year report is in development and will be distributed soon.

D. Whitaker stated data was provided to a number of state and federal agencies and universities for analysis on various species and diseases.

Discussion of the Generic SEAMAP Presentation

D. Donaldson presented the generic SEAMAP presentation to the Subcommittee. The presentation is in Harvard Graphics and it can be converted into PowerPoint. He will send a copy of the presentation file to L. Hinkey and G. White so they can incorporate their component's information and add pictures, maps and any other information to gear it toward their component. The Subcommittee feels the presentation needs to put emphasis on the cooperative nature of the SEAMAP program and to show not only the collection of the data but specifically how the data is being used by different agencies. It was suggested to send pictures, maps, sampling methods for each particular region, etc. to D. Donaldson for incorporation into the presentation. The Subcommittee feels the presentation will be useful for meetings and possibly to get additional funding for the overall program.

The Subcommittee then discussed the importance of getting additional funding into the SEAMAP program and how to do this. The importance of the program has to be made to Congress. It was suggested that one way to get the data out is through a SEAMAP data web page and the Subcommittee discussed in detail how to develop this.

After extensive discussion, the Subcommittee decided to explore the possibility of establishing a combined SEAMAP data web site. K. Williams moved to have the coordinators meet with Henry Norris from FMRI to discuss developing a SEAMAP Data Web Page. M. Street seconded it and it passed unanimously.

Status of FY1999 Funds

S. Nichols reported SEAMAP will again be level funded at \$1,132,000.00.

Proposed Activities and Budget Needs

All components agreed to stay at level funding and to try to continue operating on their current level even though they are being faced with higher overhead and other costs. H. Ansley moved that if more or less funding is received, the chairpersons will meet with the program manager to decide how the funding will be distributed. J. Hanifen seconded it and it passed unanimously. The breakdown is as follows:

Caribbean	\$	113,700.00
Gulf		512,403.00
South Atlantic		285,387.00
NMFS		220,510.00

The Subcommittee again discussed the importance of getting more funds into the SEAMAP budget. Without more funding, there is a possibility that some of the long term data bases are going to be compromised.

Planning for the 1999 Joint Annual Meeting

The Subcommittee decided to meet in the first week of August 1999 and the coordinators will check price information at 1) New Orleans, LA; 2) Tampa, FL; and 3) Key West, FL. J. Rester will inform the other coordinators where the meeting will be held.

Other Business

Cynthia Pierce distributed information from the NOAA Grants office on progress/performance reporting and the NOAA Grants Home Page and explained each section.

There being no further business, the meeting adjourned at 4:15 p.m.

SEAMAP Subcommittee Meeting
MINUTES
Lajas, Puerto Rico
Friday, August 7, 1998

APPROVED BY:


COMMITTEE CHAIRMAN

Chairman Richard Waller called the meeting to order at 8:40 a.m. The following members and others were present:

Members:

Jim Hanifen, LDWF, Baton Rouge, LA
Terry Cody, TPWD, Rockport, TX
Richard Waller, USM/IMS/GCRL, Ocean Springs, MS
Joanne Lyczkowski-Shultz, NMFS, Pascagoula, MS
Kim Williams (proxy for Mark Leiby), FDEP/FMRI, St. Petersburg, FL
Michelle Kasprzak (Environmental Data Work Group Leader), LDWF, Baton Rouge, LA
Richard Leard, GMFMC, Tampa, FL
Steve Heath, ADCNR/MRD, Gulf Shores, AL

Staff:

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

* Under "Discussion of Generic SEAMAP Presentation" capitalize and put "In-Focus" in quotes as this is a brand name. **With that change, J. Hanifen moved to approve the March 16, 1998 minutes.** J. Shultz seconded and it passed unanimously.

Administrative Report

D. Donaldson informed the Subcommittee that he will no longer be the GSMFC's SEAMAP-Gulf Coordinator and introduced Jeff Rester who will replace him as the SEAMAP-Gulf Coordinator.

The Summer Shrimp/Groundfish Survey was conducted June/July of this year. Vessels from NMFS, Louisiana, Mississippi, Alabama and Texas participated in the survey. The purpose of the survey is to determine abundance and distribution of demersal organisms in the Gulf of Mexico. There were approximately 350 samples taken.

The 1996 Atlas has been completed and distributed. Processing of the 1997 Atlas is on-going and will hopefully be completed by the end of the year. D. Donaldson asked all the members to please get data in as soon as possible so processing will not be delayed.

Only one real-time mailing was distributed and this will be discussed under the next agenda item.

SEAMAP will again be level funded (\$1.2 million) for FY1999.

Discussion of Real-time Mailings

D. Donaldson stated that only one real-time mailing was distributed this year. NMFS stopped the mailings per request of the Council. The Texas Shrimp Association (TSA) asked the GMFMC's Shrimp Advisory Panel to stop the mailings because they claim it causes pulse fishing. TSA has always been against the mailings and with the imminent implementation of BRDs the Council did not want to exacerbate the situation by providing the real-time data. T. Cody submitted an article (ATTACHMENT I) from the local Corpus Christi newspaper which discusses shrimpers receiving the "good news" of the federal decision not to distribute a map outlining where shrimp are concentrated in Texas waters prior to the season opening this year. The Subcommittee discussed the importance of the mailings and if there will be future mailings. D. Donaldson said a summary report will still be distributed after the survey. After extensive discussion on this issue, the Subcommittee directed J. Rester to contact J. Nance to give a report on the consequences of shrimping efforts and/or landings of not publishing the real-time data. After J. Nance's report in October, the Subcommittee will discuss exactly what they should ask of NMFS in their final analysis of this situation. The Subcommittee feels that they should have been part of the decision to stop the mailings because this is supposed to be a cooperative effort.

The Subcommittee then discussed changing the SEAMAP real-time data software to analyze juvenile red snapper bycatch in the research trawls. The Subcommittee feels this is something the Council and other management agencies would be interested in and should be able to start doing this in the fall. They discussed putting the data on plots on the web page initially and then developing a mailing list after interested parties realize it is available.

Discussion of Red Snapper Activities for the GSAFDF

The Subcommittee discussed the Gulf and South Atlantic Fisheries Development Foundation's draft summary report of the Red Snapper Workshop (Attachment II) held on June 29-July 1, 1998. The foundation has funds available for red snapper work and one aspect is a winter sampling effort similar to the SEAMAP summer and fall shrimp/groundfish surveys. The Subcommittee discussed submitting a proposal when the RFP is distributed. The Subcommittee is concerned that the RFP will be for short term funding but it's possible to turn into long term funding because more fishery-independent data is needed in order to make important management decisions.

Status of 1999 Budget

S. Nichols was not there to give a report but D. Donaldson said the SEAMAP Program will be level funded again.

Activities and Budget Needs for FY1999

After discussion, all the states agreed to try to do the same activities as last year at level funding. Both Mississippi and Louisiana informed the Subcommittee that indirect costs may affect their cruises next year. J. Shultz expressed her concern that the Archiving Center needs more funding in order to enter data. She feels that Florida's contribution to the Spring Plankton Survey

is redundant and maybe those funds could go to the Archiving Center. She will discuss this with S. Turner and keep the Subcommittee informed. 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

Work Group Reports

- a. Data Coordinating - K. Savastano was not in attendance but he will mail the report before the next meeting in October.
- b. Environmental Data - M. Kasprzak said the work group met in New Orleans in April 1998 to discuss the collection of chlorophyll data and to update the SEAMAP Procedures Manual. The Subcommittee then reviewed the report (Attachment III) and M. Kasprzak discussed the proposed changes. The Subcommittee will review the report again at the next meeting after all changes have been incorporated. R. Waller then asked M. Kasprzak to have the work group meet via conference call to develop a standard metadata form to be used for each cruise.

Preparation of Cooperative Agreements

- a. Review of Annual Operations Plan - D. Donaldson distributed the Operations Plan and stated there were no major changes. He asked the Subcommittee to review and send changes before September 1st. The reef fish survey is still in the Operations Plan but it will not be done this year. This will stay in the document because NMFS plans to do the survey next May or June. S. Nichols will send a letter to the Subcommittee informing them of the status of this survey.
- b. NMFS Portion of Cooperative Agreement - There were no major changes and C. Pierce will give a presentation at the joint meeting.

Other Business

R. Waller reminded everyone to send D. Donaldson pictures and other information for the SEAMAP generic presentation.

R. Waller gave a brief overview on the April 7th meeting with NMFS personnel regarding SEAMAP data use. He said S. Nichols is still concerned with the calibration between vessels and the Subcommittee will discuss calibration comparisons at the next meeting.

J. Hanifen stated that according to N. Rabalias hypoxia measurements, the "Dead Zone" in the Gulf estimated to be 4,800 sq. miles which is down from 6,000 last year. He also stated that he has been gathering SEAMAP data on hypoxia but it is too soon to give a definite analysis.

J. Shultz said the red drum tag and recapture effort is progressing. So far, 1,200 fish east of the River have been sampled but only 22 tagged fish were recovered. They've also sampled 1,000 fish west of the river but no tagged fish were recovered.

There being no further business, the meeting adjourned at 11:57 a.m.

ComFIN Recommendations Work Group Report

ComFIN Recommendations Work Group

September 1998

ComFIN Recommendations Work Group
August 11, 1998
Atlanta, Georgia

The meeting was called to order at 8:35 a.m. and the following people were present:

John Poffenberger, NMFS, Miami, FL
Ron Lukens, GSMFC, Ocean Springs, MS
Wilson Laney, USFWS, Raleigh, NC
Carter Watterson, NCDMR, Morehead City, NC
Dave Donaldson, GSMFC, Ocean Springs, MS

D. Donaldson stated that the main purpose of the meeting was to develop a recommendations document which will guide the ComFIN. The group utilized a report developed from the ComFIN brainstorming session (attached) which outlines the issues and problems regarding commercial data collection in the Southeast Region. From these issues, the group developed recommendations and associated tasks that will guide ComFIN into the future. The Recommendations document represents the administrative record for this portion of the meeting. D. Donaldson stated that he would clean up the draft document and attempt to prioritize the tasks. The document will be distributed to the group for their review and be presented to the ComFIN Committee at the upcoming meeting.

There being no further business, the meeting was adjourned at 4:30 p.m.

Trigger Question: In the context of building a better southeast fishery statistics system, what issues should be addressed?

I. Cooperation and/or Communication

1. Lack of Intra-Federal Coordination and Cooperative, i.e., funding, administration, and operations.
4. Need stronger cooperative relationships among agencies involved in fisheries data programs.
7. Increase use of electronic communication between State/Federal partners, i.e., real-time data transfer, electronic bulletin boards, E-mail, etc..
8. Need to achieve equality among participants as partners in CSP.
10. Need to establish a unified approach to fisheries statistics data collection by agencies involved in management, i.e., state, federal, international.
11. Need increased input and support from state and federal administrators (directors).
13. Need improved communication among agencies involved in fisheries statistics program.
19. Improve and maintain industry cooperation in CSP and evaluations. (see 14)
23. Identify successes and failures of past strengths and weaknesses.
24. Need for formal coordination among agencies involved in fishery statistics program.
41. Who will take credit for good work (see 4, see 25).
45. Routine individual agency program evaluation.
46. Define participants' role, responsibilities and accountability (see 10).

II. Data Needs and Definitions

2. Need to recognize problems with data collection and devise solutions.
3. Define current and future data needs for fishery management (regulations, stock assessment, economic, etc.).
5. Integrate fisheries dependent and fisheries independent data programs.
12. Need to define resource users, such as commercial dealers, processors, etc. and recreational, passive, desires, needs and willingness to cooperation.
16. Inclusion of outside experts in technical, administration and management processes and procedures of State/Federal statistics.
17. What role will logbooks play in landings data?
18. How should data be collected?
20. Define stock assessment uses of data.
22. Assess and streamline amount of data collected (type and quantity).
25. Need for standardized sampling protocol for fisheries statistics for CSP.

27. Define and identify end users. What is an end user? Who are they?
30. Identify data gaps and ways to fill them.
31. Need for quality control and quality assurance procedures for data collection and management.
36. Tip needs direction.
49. Need to determine role of fisheries independent data programs in management.
52. What are data uses.
54. Need for social and economic data.
55. Need for effort data.
56. Need for comprehensive gear coverage.

III. Data Management

6. Inadequate data access, need user friendly computer systems.
9. Increase timeliness of data dissemination.
15. Need consistency and standardization for coding systems, e.g., species, gear, etc..
28. Need for standardized summaries and management outlines.
37. Need data registry system (tracking).
38. Protect data from enforcement use. (ensure confidentiality).
44. Use of technology to improve data collection, handling & distribution.
51. Accuracy, detail, compliance of data timeliness of availability to users.

IV. Funding

14. Need coordination within and between agencies for funding of long term projects and monitoring.
26. Need state input to federal agency funding mechanisms.
32. Need sufficient funding for administration, coordination, and operational components of CSP (see 8).
33. Funding for short-term special projects.
43. Means to promote professional development of staff.
50. Is there appropriate staff, i.e., number, qualifications, type etc.
58. Define funding requirements and allocations based on need, and requirements.

V. Procedures

21. Need recognition and support for fishery statistics by Congress, industry and federal/state/local governments.
29. Separate port agents' uses from agency uses of data.

35. Decrease federal administration and documentation for cooperative projects. (see 52)
34. Provide evaluation mechanism for fishery statistics programs.
39. Need public education programs to enhance support for fisheries statistics.
40. Formal feedback procedures.
48. Paper work reduction.
53. Adequacy of state and federal legislature.
57. What liabilities may be associated with collection, use or mis-use, distribution, etc. of fisheries statistics.

VI. Confidentiality

42. Need to clarify the relationship between protecting confidential data and using data for various (management, assessment, etc.) purposes.
59. Define confidentiality of business data for individuals, firms, vessels, etc..

VII. Planning

47. Need long-term planning process.

RECOMMENDATIONS DOCUMENT

for the

**Commercial Fisheries
Information Network
(ComFIN)**

ComFIN Recommendations Work Group

September 1998

Recommendation 1: Establish an industry advisory group to provide user input into the process of collecting, managing and using commercial fisheries data.

- 1997 Task 1: Establish a user advisory panel for ComFIN
- 1999 Task 2: Develop and disseminate program information that provides notification of accomplishments to the public.
- Ongoing Task 3: Develop and maintain electronic communications process (e-mail, web sites, etc.) to provide access to program information.

Recommendation 2: Identify current and future data needs for fisheries management

- 1997 Task 1: Develop an annual data collection plan which determines the species that will be targeted for the upcoming year.
- 1997 Task 2: Develop a data module for the collection of social and economic data
- 1999 Task 3: Develop a list of current stock assessment methods and data needed to conduct each one of these methods (sample size associated with the reliability of assessment).

Recommendation 3: Evaluate the best methods for collecting catch and effort data for commercial fisheries.

- 1997 Task 1: Further develop the necessary data elements for the trip ticket, biological sampling, social/economic, and discards and protected species interaction modules.
- 1999 Task 2: Based on Task 1, identify the best methods for collecting these data elements within each module.

Recommendation 4: Establish the GSMFC SFFMC as the senior level decision making body of the ComFIN. This recommendation recognizes that the SFFMC represents the Gulf region only. The South Atlantic and Caribbean regions will be represented by the ACCSP Coordinating Council and the CFMC, respectively.

- 1998 Task 1: Add discussion of ComFIN issues as a standing agenda item to the SFFMC of the GSMFC
- 1998 Task 2: The ComFIN committee will develop the issues to be addressed by the respective decision level bodies of the Gulf, South Atlantic, and Caribbean regions.

Recommendation 5: Develop standardized procedures for collection commercial data in the Region.

- 1998 Task 1: Task ad hoc work group to develop a procedures document which outlines the methods and techniques for collection data.
- 1999 Task 2: Task ad hoc work group to develop a QA/QC document which determines standard for commercial data including statistical, training, and QA/QC standards.

Recommendation 6: Establish and maintain a marine commercial fishery data management system for the Region (Goal 3 FIN).

- 1998 Task 1: Establish procedures for ensuring against inappropriate access to and use of confidential data
- 1999 Task 2: In conjunction with the ACCSP, ComFIN will develop standardized codes for species, gear, area, etc.

Recommendation 7: Develop an outreach program for ComFIN

- 1999 Task 1: Establish an educational work group.
- 1999 Task 2: Identify a list of types of end users of data. Once identified, compile a list of users, as appropriate.
- 1999 Task 3: Develop an outreach program and materials.

Recommendation 8: Develop a process for coordinating fishery dependent and fishery independent data activities.

- 1999 Task 1: Identify uses of fishery independent data in stock assessment and management decision processes.
- 1999 Task 2: Assess the potential for duplication of effort between fishery dependent and fishery independent activities.
- 1999 Task 3: Evaluate current fishery independent data activities (biological and environmental) to determine effectiveness in meeting stock assessment and management decision needs.
- 2000 Task 4: Based on tasks 1-3, make recommendations to appropriate fishery independent programs.

Recommendation 9: Metadata should accompany all marine commercial fishery catch and effort.

- 1999 Task 1: Formulate and implement a process for compiling metadata input.
- Ongoing Task 2: Continue to address sources, documentation, criteria and other technical issues regarding metadata

Recommendation 10: Develop funding initiatives to establish and enhance marine commercial fishery surveys in the Region.

- 2000 Task 1: Develop a mechanism to identify and implement short-term special projects.

Recommendation 11: Determine the adequacy of state and federal legislation establishing authorities for data collection and management activities.

- 2000 Task 1: Review existing state and federal statutes pertaining to data collection and management activities to determine adequacy in meeting program requirements.
- 2000 Task 2: Make recommendations for state and federal statutes and/or amendments to existing laws to meet program requirements.

Recommendation 12: Conduct reviews to evaluate the program's effectiveness in meeting fisheries needs of the Region.

2000 Task 1: Conduct an external program review at least every five years to evaluate the overall program effectiveness.

Ongoing Task 2: Thru operations plans and status reports, document ongoing evaluation of program and provide guidance to the ComFIN Committee for making recommendations to resolve the identified issues.

Recommendation 13: Establish a coordination body that includes state, federal, and interstate partners. This recommendation has been implemented by the FIN MOU.

Ongoing Task 1: Thru the FIN, develop and maintain communications (real-time data transfer, FTP, e-mail, etc.) through the Internet to program partners.

Ongoing Task 2: Provide feedback to program partners on progress toward program goals.

Recommendation 14: To coordinate the ComFIN with other regional and national commercial data collection programs (Goal 4 FIN)

Ongoing Task 1: Coordinate with the development of the ACCSP and PacFIN

Time Table	<u>1996</u>	<u>1997</u>	<u>1998</u>	<u>1999</u>	<u>2000</u>
Planning, Management, and Evaluation					
ComFIN Committee					
Maintenance of ComFIN Committee	X	X	X	X	X
Establish senior-level policy board			X		
Framework Plan					
Review of Framework Plan					X
Operations Plans					
Review of legislation					X
Develop funding mechanism for short-term projects					X
Information dissemination					
Establish educational work group				X	
Establish user advisory panel		X			
Process for notification of program accomplishments				X	
Develop outreach materials and list of users				X	
Use Internet communications	X	X	X	X	X
Program Review					
Conduct program review					X
Data Collection					
Data components					
Review of components of fisheries					X
Needed data elements					
Develop process for metadata				X	X
Collection of metadata					X
Develop social/economic data module		X	X	X	X
Develop catch/effort modules		X	X	X	
Standard data collection protocols					
Develop data collection procedures manual			X	X	
Develop standard codes for species, gear, etc.				X	
Quality control/assurance					
Development of QA/QC standards				X	
Coordination of data collection					
Development of data collection plan		X	X	X	X
Develop list of stock assessment methods				X	
Identify uses of fishery independent data				X	
Assess duplication of effort between fishery-dependent and -independent activities				X	
Evaluate current fishery independent data activities				X	
Make recommendations to appropriate fishery independent programs					X
Innovative collection technology					
Evaluate innovative data collection technologies	X	X	X	X	X
Data Management					
Data management system					
Review location and responsibility of DMS					X
Hardware/software capabilities					
Review hardware/software capabilities					X
Data maintenance	X	X	X	X	X
Standard data management protocols	X	X	X	X	X
Integration of data bases	X	X	X	X	X
Innovative data management technology	X	X	X	X	X
Data confidentiality	X	X	X	X	X
Development of National Program					
	<u>1996</u>	<u>1997</u>	<u>1998</u>	<u>1999</u>	<u>2000</u>
Long-term planning					
Coordination with ACCSP and Pacific RecFIN	X	X	X	X	X

Coordination with other programs

Coordination with ACCSP and Pacific RecFIN

X X X X X

Consistency and comparability

Coordination with ACCSP and Pacific RecFIN

X X X X X

ComFIN Data Collection Procedures Work Group Report

ComFIN Data Collection Procedures Work Group

September 1998

Data Collection Procedures Work Group
Meeting Summary
August 13, 1998
Atlanta, Georgia

The meeting was called to order at 8:40 a.m. and the following people were present:

Ron Lukens, GSMFC, Ocean Springs, MS
Joe Shepard, LDWF, Baton Rouge, LA
Dave Donaldson, GSMFC, Ocean Springs, MS

Purpose of the Meeting

D. Donaldson stated that the main purpose of the meeting is to develop a document which outlines the procedures for the collection of data under the ComFIN. J. Shepard presented a draft document which outlined the procedures for collection of commercial data. The group reviewed and edited the document. Staff will revise the document and the work group will present a report to the ComFIN Committee at the September meeting. The revised document represents the administrative record for this portion of the meeting.

There being no further business, the meeting was adjourned at 12:30 p.m.

**ComFIN Data Collection
Procedures Document**

for the

**Commercial Fisheries Information Network
(ComFIN)**

ComFIN Data Collection Procedures Work Group

September 1998

INTRODUCTION

The Commercial Fisheries Information Network (ComFIN) is a program to establish a state-federal cooperative program to collect, manage, and disseminate statistical data and information on the marine commercial fisheries of the Southeast Region.¹

The scope of the ComFIN includes the Region's commercial 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.

GOAL

The mission of the 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. The four goals of the ComFIN include to plan, manage, and evaluate commercial fishery data collection activities; to implement a marine commercial fishery data collection program; to establish and maintain a commercial fishery data management system; and to support the establishment of a national program.

DATA COLLECTION PROCEDURES

CATCH AND EFFORT

The catch and effort component of commercial fisheries data collection is composed of a trip ticket and fishery information module. The program is a mandatory, trip-based system with all fishermen and dealers required to report standardized data elements. Under this program, dealers are required to submit completed trip tickets. However, there must be considerable interaction between dealers and fishermen to ensure accuracy and completeness of the data. It is important that both fishermen and dealers be responsible for accurate data collection and must be held accountable for not reporting or inaccurate reporting.

The trip ticket is essential to the commercial fishery data collection process. Trip tickets provide the key elements (Catch by Species, Gear and Area) that will be used to stratify sampling for all other modules. In essence the trip ticket defines the sampling universe while providing a census of landings. The fishery information module focuses on trips taken by the fishery and is designed to collect more detailed effort information on the various types of fisheries. While this component is designed to provide flexibility in the collection of essential data elements by allowing the collection of fishery information in a survey, all of the data elements defined in this component can be

¹The Southeast Region (the Region) includes Alabama, Florida, Georgia, Louisiana, Mississippi, North Carolina, Puerto Rico, South Carolina, Texas, and the U.S. Virgin Islands.

collected on a trip ticket if so desired.

Site Selection (Trip Tickets)

Trip tickets are to be completed by each dealer or harvester acting as a dealer in each state. Any marine resource harvester who sells, consigns, transfers, or barter marine fishery products to anyone other than a dealer would himself be acting as a dealer and would therefore be responsible for reporting as a dealer.

Site Selection (Fishery Information if collected in a survey)

This section is designed to collect effort information for a fishery. Samples are to be stratified by species composition (type of fishery), gear used, and area fished. Sampling sites are preselected quarterly by weighting a site using the number of trips reported at that site for that strata from the same quarter the previous years. Site selection adjustments should be made with insight from the previous quarters activity on trip tickets as well as changes in activity at a site reported by port agents. The intent is to sample a site in proportion to total trips in that strata.

Sampling Targets

Sampling targets are determined based on a predetermined level of precision required of the data. Any trip type can be sampled with primary emphasis placed on the type of fishery, gear and area chosen by the site selection criteria. No more than 10 non primary type samples at any site are to be collected. Every effort should be made to associate a sample with a trip ticket number, but the ticket number is not required. Port agents should work closely with dealers to enhance the productivity of their sampling effort. This information needs to be collected from the fisherman.

Necessary Data Elements

Necessary data elements are listed below. Those data elements identified as "T" must be collected by trip tickets. Those data elements identified as "B" can be collected by trip tickets or in a 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 # (need to discuss)	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 (does state code need to be included on the form?)	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 (need to discuss)	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

Quality Control and Assurance
Needs to be developed

BIOLOGICAL SAMPLING

The biological sampling module focuses on bioprofile information for species of concern. Sampling is designed to statistically collect random length-frequency measurements, age, sex and reproductive information to aid in stock assessments.

Site Selection

Samples are to be stratified by primary species of concern, gear used, and area fished. Species of concern are listed as either primary or secondary and will be provided to the sampler. Sampling sites are preselected quarterly by weighting sites on the landings of each primary species in the strata for the same quarter the previous years. Sample selection adjustments should be made with insight from the previous quarters activity on landings as well as changes in activity at a site reported by port agents. The intent is to sample a site in proportion to total landings in that strata.

Sampling Targets (Length-Frequencies)

Sampling targets are determined based on an agreed upon level of precision required of the data (clarify). Species of primary or secondary concern can be sampled at a site with emphasis placed on primary species in the stratum assigned by the sample site selection criteria. Individuals should be sampled in a manner that would spread collection throughout the sample period. No more than 20 individuals should be measured from any market grade from a trip. If the catch is not sorted by market grade, then randomly select 40 individuals from the unsorted catch. Individuals should be selected at random (SEE "SELECTING A RANDOM SAMPLE"). Every effort should be made to obtain an associated trip ticket number with the sample, but the ticket number is not required. Port agents should work closely with dealers to enhance the productivity of their sampling effort.

Sampling Targets (Age, Reproduction)

Sampling targets are determined based on an agreed upon level of precision required of the data (clarify). Species of primary or secondary concern can be sampled at a site with emphasis placed on primary species. Individuals should be selected based on completing a matrix of the number of samples required at a given size range.

Individuals should be sampled in a manner that would spread collection throughout the sample period. Length measurements are required. Every effort should be made to associate a sample with a trip ticket number, but the ticket number is not required. Port agents should work closely with dealers to enhance the productivity of their sampling effort.

Necessary Data Elements

Necessary data elements are listed below.

	Data Element	Description	Necessary
1	Trip Ticket Number	Trip Ticket Number If Available	
2	Record Number	Annual Sequential Interview Number	
3	Record Type	Random or Bioprofile (length frequency vs. hard parts)	
4	Sample Date	Month / Day / Year	
5	Sampler	Port Agent Code	
6	State (Landing)	NMFS State Code	
7	County (Landing)	NMFS County Code	
8	Zip Code (Landing)	7 Digit Zip	
9	Sampling Location	Dealer Number	
10	Gear Code	NMFS Gear Code	
11	Area Fished	NMFS Area Code	
12	Area Code Type	Type of Area Descriptor	
13	Species Code	10 Digit NODC Code	
14	Landing Condition	Condition Landed (Whole, Guttled, Headed, Etc.)	
15	Market Size Range	Actual Size Range	
16	State (Sampled)	NMFS State Code	
17	County (Sampled)	NMFS County Code	
18	Zip (Sampled)	7 Digit Zip	
19	Number Measured	Number of Fish Measured	
20	Length	Length of Individual Fish	
21	Length Units	Total Length, Standard Length, Etc.	
22	Weight	Weight of Individual Fish	
23	Weight Units	Pounds, Kilograms, Etc.	
24	Sex	NMFS Sex Code	
25	Age Tag Number	Annual Age Structure Identifier	

Quality Control and Assurance

Need to be developed

HARVESTERS' FIXED COST ECONOMIC MODULE

Need to be developed

HARVESTERS' VARIABLE COST ECONOMIC MODULE

Need to be developed

HARVESTERS' SOCIOLOGICAL DATA MODULE

Need to be developed

DISCARD MODULE

Need to be developed

PROTECTED SPECIES INTERACTIONS MODULE

Need to be developed

DATA RECONCILIATION AND STANDARDIZATION PROCEDURES

Identify and describe data elements going into centralized database

Decide on Code Standards

Develop QA/QC

Develop data formats for centralized database

Deadlines for submission of data to centralized database

ComFIN Data Collection Work Group Report

ComFIN Data Collection Work Group

September 1998

Data Collection Work Group
Meeting Summary
August 12, 1998
Atlanta, Georgia

The meeting was called to order at 8:50 a.m. and the following people were present:

John Poffenberger, NMFS, Miami, FL
Ron Lukens, GSMFC, Ocean Springs, MS
Carter Watterson, NCDMR, Morehead City, NC
Joe Shepard, LDWF, Baton Rouge, LA
Page Campbell, TPWD, Rockport, TX
Geoff White, ASMFC, Washington, DC
Dave Donaldson, GSMFC, Ocean Springs, MS

Purpose of the Meeting

D. Donaldson stated that the main purpose of the meeting is to further refine the catch/effort module for the ComFIN, begin discussing the discards and protected species interactions modules for ComFIN and RecFIN(SE), and address several issues regarding data collection activities in the Southeast Region.

Discussion of Catch/Effort Module

D. Donaldson stated that the group discussed the catch and effort modules developed for ComFIN. Ideally, all data elements for catch and effort will be collected via the trip ticket program; however, in the initial implementation of the program, partners realize that this will not always be feasible. Therefore, some of the detailed gear and area information may be collected by other methods (i.e. surveys). The group identified several areas that needed to be clarified by the Committee regarding the information being collected via the trip ticket and made some modification to the data elements. The revised table is attached and the issues raised by the group are noted in the table.

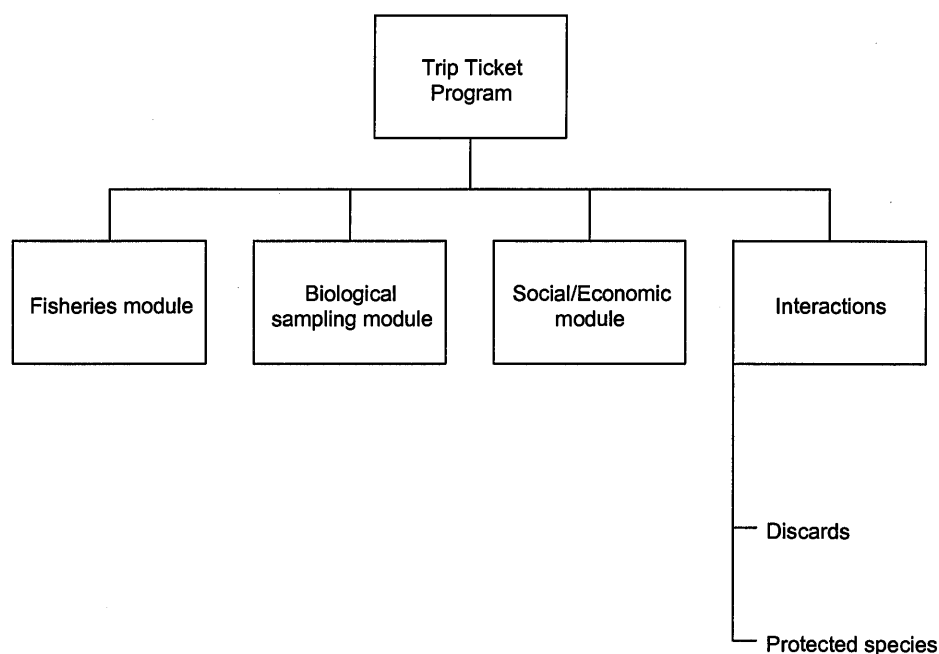
The group then discussed the biological sampling module. The group reviewed the data elements and made some revisions. The revised table of data elements for biological sampling is attached. The group discussed the necessity of some of the data elements depending on the type of sampling that is being conducting. If length frequency data is being collected, the associated area, gear, and other pertinent information needs to be either collected as linked back to the trip ticket number (if available). However, if hard parts (otoliths, scales, etc.) are being collection, the associated gear, area etc. may not be needed. J. Poffenberger stated he would inquire about this issue and get back to the group.

Discussion of Discards and Protected Species Interaction Module

D. Donaldson stated that the ACCSP has convened various workshops on this issues and have developed a data collection program for discards and protected species interaction. The group reviewed the program that the ACCSP has developed and were concerned about the magnitude of the data collection effort. J. Shepard asked what the purpose for collecting these data. The group discussed this issue and decided that there were two reasons for collection this information. The first

is to record interactions with protected species. It was suggested that these data could be collected via an at-sea observer program. The other reason for collecting the data is to get a measure of fishing mortality. This information can be collected by fishery-independent sampling, at-sea observers and self-reporting. The group began discussing the magnitude of the program. Due to the different reasons for collecting the data, the group believed that it might be beneficial to separate the discards and protected species interactions components. Since the focus of these two activities are very different, it was believed separating them would be better and reduce the overall magnitude of the collection activities. Therefore, the Work Group **recommends that the discards and protected species interactions module be divided into two separate modules.**

After reviewing the data element for the various modules, the group discussed the overall schematic of the ComFIN. The group revised the existing schematic and the revised layout is included below.



Discussion of Dealer Codes Issues

J. Poffenberger stated that there are two issues related to dealer codes. This first issue is that the NMFS Southeast Fisheries Science Center (SEFSC) needs to have an up to date list of the current and valid codes that the individual states assign to a dealers. The current procedure is for the states to give the SEFSC an updated list once or twice a year. Dealer codes are becoming more important as a means of crossing referencing data sets and for other reasons. Therefore, the procedures need to be changed so that the states provide updates to the dealer list every month for any newly permitted/licensed dealers. It maybe useful to make this procedure part of the quality control that the states use before the landings data are sent to the SEFSC. **The group agreed that the states need to provide updates to the dealer list every month for any newly permitted/licensed dealers.**

The other issue is concerns making dealer codes unique for the entire region, and ultimately on a national basis. Currently, the SEFSC creates uniqueness of a sort by associating the state code with the license number (i.e., the dealer code that is provided to the SEFSC in the general canvass

data) issued by the state. However, this method will not work for dealers who's company is in one state and buys fish in another state. This company has a separate number for the two states and it is difficult to know that it is the same dealer. Therefore, **the group decided to develop a standard dealer data base file which would include license number, address, dealer name, social security number/federal tax id number, resident status, and other pertinent information.** A list of necessary data elements for dealer data base is attached.

Discussion of Data Reconciliation Issues

J. Poffenberger stated the issue is whether and/or how data from two, separate data collection sources should be compared and how any differences can be resolved and/or explained. The issue is whether ComFIN should have a standard on what types of comparisons should be made as part of ComFIN's quality assurance procedures and what should be done to 'correct' either one or both of the databases. The group discussed this issue and decided that this would be addressed by the Data Collection Procedures Work Group in developing the data collection procedures document.

Discussion of General Canvass Issues

J. Poffenberger stated that some states do not collect all the data elements for general canvass. The issue is whether 'incomplete' data should be entered into the SEFSC general canvass database. It was noted that there will be a minimum set of data that need to be collected under ComFIN. Those data will need to be collected by the program partners. The group discussed the need for standard codes for species, area, gear, etc. and addressed the need to developing these codes. It was pointed out the ACCSP has developed many of these standard codes and **it was suggested that an ad hoc work group be charged with developing similar codes for ComFIN. This ad hoc group will work with the ACCSP to ensure comparability and compatibility.**

There being no further business, the meeting was adjourned at 4:00 p.m.

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 # (need to discuss)	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 (does state code need to be included on the form?)	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 (need to discuss)	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

Standard data elements of biological sampling.

	DATA ELEMENT	DESCRIPTION	
1	Trip Ticket Number	Trip Ticket Number If Available	
2	Record Number	Annual Sequential Interview Number (Link to Fishery Data Collected)	
3	Record Type	Random or Bioprofile (length frequency vs. hard parts)	
4	Sample Date	Month / Day / Year	
5	Sampler	Port Agent Code	
6	State (Landing)	NMFS State Code	
7	County (Landing)	NMFS County Code	
8	Zip Code (Landing)	7 Digit Zip	
9	Sampling Location	Dealer Number	
10	Gear Code	NMFS Gear Code	
11	Area Fished	NMFS Area Code	
12	Area Code Type	Type of Area Descriptor	
13	Species Code	10 Digit NODC Code	
14	Landing Condition	Condition Landed (Whole, Guttled, Headed, Etc.)	
15	Market Size Range	Actual Size Range	
16	State (Sampled)	NMFS State Code	
17	County (Sampled)	NMFS County Code	
18	Zip (Sampled)	7 Digit Zip	
19	Number Measured	Number of Fish Measured	
20	Length	Length of Individual Fish	
21	Length Units	(Total Length, Standard Length, Etc.)	
22	Weight	Weight of Individual Fish	
23	Weight Units	(Pounds, Kilograms, Etc.)	
24	Sex	NMFS Sex Code	
25	Age Tag Number	Annual Age Structure Identifier	

**DEALER LICENSE/PERMIT CODES
STANDARDS FOR REGIONAL DATABASE**

The SEFSC maintains a database of all codes for dealer licenses/permit number that are used in the fishery statistics databases for the SE region. The goal is to have a single, unique code for each dealer in the SE. That unique code will be used in any database that contains fishery statistics and includes a dealer code. The standard for the unique dealer code is the license or permit number issued by the respective State and the dealer code provided in the general canvass monthly statistics.

The information in the following table must be provided by each state for every dealer that has a dealer license/permit in the state.

Description	Field Name	Field Width	Field Type
Dealer Code/Number	DEALERCODE	9	C
Business Name	BNAME	40	C
Business Address	BADDRESS	40	C
City	BCITY	30	C
State	BSTATE	2	C
Zip code	BZIP	10	C
Phone	BPHONE	12	C
Date of Issue	DATE_ISSUE	8	mmddyyyy
Date License Expires	DATE_EXP	8	mmddyyyy
Federal Tax id. Number	CODE	11	C

The following information is requested, but not essential.

Description	Field Name	Field Width	Field Type
Person to Contact	CONTACT	40	C
Location of Contact	BLOCATION	40	C
Owner	OWNER	40	C
Owner's Phone Number	OPHONE	12	C
County Code	ST_CNTYCDE	3	C

ComFIN Data Collection Procedures Work Group Report

ComFIN Data Collection Procedures Work Group

September 1998

Data Collection Procedures Work Group
Meeting Summary
August 13, 1998
Atlanta, Georgia

The meeting was called to order at 8:40 a.m. and the following people were present:

Ron Lukens, GSMFC, Ocean Springs, MS
Joe Shepard, LDWF, Baton Rouge, LA
Dave Donaldson, GSMFC, Ocean Springs, MS

Purpose of the Meeting

D. Donaldson stated that the main purpose of the meeting is to develop a document which outlines the procedures for the collection of data under the ComFIN. J. Shepard presented a draft document which outlined the procedures for collection of commercial data. The group reviewed and edited the document. Staff will revise the document and the work group will present a report to the ComFIN Committee at the September meeting. The revised document represents the administrative record for this portion of the meeting.

There being no further business, the meeting was adjourned at 12:30 p.m.

**ComFIN Data Collection
Procedures Document**

for the

**Commercial Fisheries Information Network
(ComFIN)**

ComFIN Data Collection Procedures Work Group

September 1998

INTRODUCTION

The Commercial Fisheries Information Network (ComFIN) is a program to establish a state-federal cooperative program to collect, manage, and disseminate statistical data and information on the marine commercial fisheries of the Southeast Region.¹

The scope of the ComFIN includes the Region's commercial 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.

GOAL

The mission of the 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. The four goals of the ComFIN include to plan, manage, and evaluate commercial fishery data collection activities; to implement a marine commercial fishery data collection program; to establish and maintain a commercial fishery data management system; and to support the establishment of a national program.

DATA COLLECTION PROCEDURES

CATCH AND EFFORT

The catch and effort component of commercial fisheries data collection is composed of a trip ticket and fishery information module. The program is a mandatory, trip-based system with all fishermen and dealers required to report standardized data elements. Under this program, dealers are required to submit completed trip tickets. However, there must be considerable interaction between dealers and fishermen to ensure accuracy and completeness of the data. It is important that both fishermen and dealers be responsible for accurate data collection and must be held accountable for not reporting or inaccurate reporting.

The trip ticket is essential to the commercial fishery data collection process. Trip tickets provide the key elements (Catch by Species, Gear and Area) that will be used to stratify sampling for all other modules. In essence the trip ticket defines the sampling universe while providing a census of landings. The fishery information module focuses on trips taken by the fishery and is designed to collect more detailed effort information on the various types of fisheries. While this component is designed to provide flexibility in the collection of essential data elements by allowing the collection of fishery information in a survey, all of the data elements defined in this component can be

¹The Southeast Region (the Region) includes Alabama, Florida, Georgia, Louisiana, Mississippi, North Carolina, Puerto Rico, South Carolina, Texas, and the U.S. Virgin Islands.

collected on a trip ticket if so desired.

Site Selection (Trip Tickets)

Trip tickets are to be completed by each dealer or harvester acting as a dealer in each state. Any marine resource harvester who sells, consigns, transfers, or barbers marine fishery products to anyone other than a dealer would himself be acting as a dealer and would therefore be responsible for reporting as a dealer.

Site Selection (Fishery Information if collected in a survey)

This section is designed to collect effort information for a fishery. Samples are to be stratified by species composition (type of fishery), gear used, and area fished. Sampling sites are preselected quarterly by weighting a site using the number of trips reported at that site for that strata from the same quarter the previous years. Site selection adjustments should be made with insight from the previous quarters activity on trip tickets as well as changes in activity at a site reported by port agents. The intent is to sample a site in proportion to total trips in that strata.

Sampling Targets

Sampling targets are determined based on a predetermined level of precision required of the data. Any trip type can be sampled with primary emphasis placed on the type of fishery, gear and area chosen by the site selection criteria. No more than 10 non primary type samples at any site are to be collected. Every effort should be made to associate a sample with a trip ticket number, but the ticket number is not required. Port agents should work closely with dealers to enhance the productivity of their sampling effort. This information needs to be collected from the fisherman.

Necessary Data Elements

Necessary data elements are listed below. Those data elements identified as "T" must be collected by trip tickets. Those data elements identified as "B" can be collected by trip tickets or in a 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 # (need to discuss)	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 (does state code need to be included on the form?)	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 (need to discuss)	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

Quality Control and Assurance
Needs to be developed

BIOLOGICAL SAMPLING

The biological sampling module focuses on bioprofile information for species of concern. Sampling is designed to statistically collect random length-frequency measurements, age, sex and reproductive information to aid in stock assessments.

Site Selection

Samples are to be stratified by primary species of concern, gear used, and area fished. Species of concern are listed as either primary or secondary and will be provided to the sampler. Sampling sites are preselected quarterly by weighting sites on the landings of each primary species in the strata for the same quarter the previous years. Sample selection adjustments should be made with insight from the previous quarters activity on landings as well as changes in activity at a site reported by port agents. The intent is to sample a site in proportion to total landings in that strata.

Sampling Targets (Length-Frequencies)

Sampling targets are determined based on an agreed upon level of precision required of the data (clarify). Species of primary or secondary concern can be sampled at a site with emphasis placed on primary species in the stratum assigned by the sample site selection criteria. Individuals should be sampled in a manner that would spread collection throughout the sample period. No more than 20 individuals should be measured from any market grade from a trip. If the catch is not sorted by market grade, then randomly select 40 individuals from the unsorted catch. Individuals should be selected at random (SEE "SELECTING A RANDOM SAMPLE"). Every effort should be made to obtain an associated trip ticket number with the sample, but the ticket number is not required. Port agents should work closely with dealers to enhance the productivity of their sampling effort.

Sampling Targets (Age, Reproduction)

Sampling targets are determined based on an agreed upon level of precision required of the data (clarify). Species of primary or secondary concern can be sampled at a site with emphasis placed on primary species. Individuals should be selected based on completing a matrix of the number of samples required at a given size range.

Individuals should be sampled in a manner that would spread collection throughout the sample period. Length measurements are required. Every effort should be made to associate a sample with a trip ticket number, but the ticket number is not required. Port agents should work closely with dealers to enhance the productivity of their sampling effort.

Necessary Data Elements

Necessary data elements are listed below.

	Data Element	Description	Necessary
1	Trip Ticket Number	Trip Ticket Number If Available	
2	Record Number	Annual Sequential Interview Number	
3	Record Type	Random or Bioprofile (length frequency vs. hard parts)	
4	Sample Date	Month / Day / Year	
5	Sampler	Port Agent Code	
6	State (Landing)	NMFS State Code	
7	County (Landing)	NMFS County Code	
8	Zip Code (Landing)	7 Digit Zip	
9	Sampling Location	Dealer Number	
10	Gear Code	NMFS Gear Code	
11	Area Fished	NMFS Area Code	
12	Area Code Type	Type of Area Descriptor	
13	Species Code	10 Digit NODC Code	
14	Landing Condition	Condition Landed (Whole, Guttled, Headed, Etc.)	
15	Market Size Range	Actual Size Range	
16	State (Sampled)	NMFS State Code	
17	County (Sampled)	NMFS County Code	
18	Zip (Sampled)	7 Digit Zip	
19	Number Measured	Number of Fish Measured	
20	Length	Length of Individual Fish	
21	Length Units	Total Length, Standard Length, Etc.	
22	Weight	Weight of Individual Fish	
23	Weight Units	Pounds, Kilograms, Etc.	
24	Sex	NMFS Sex Code	
25	Age Tag Number	Annual Age Structure Identifier	

Quality Control and Assurance

Need to be developed

HARVESTERS' FIXED COST ECONOMIC MODULE

Need to be developed

HARVESTERS' VARIABLE COST ECONOMIC MODULE

Need to be developed

HARVESTERS' SOCIOLOGICAL DATA MODULE

Need to be developed

DISCARD MODULE

Need to be developed

PROTECTED SPECIES INTERACTIONS MODULE

Need to be developed

DATA RECONCILIATION AND STANDARDIZATION PROCEDURES

Identify and describe data elements going into centralized database

Decide on Code Standards

Develop QA/QC

Develop data formats for centralized database

Deadlines for submission of data to centralized database

APPROVED BY:


COMMITTEE CHAIRMAN

**FLOUNDER TECHNICAL
TASK FORCE MINUTES
August 17-20, 1998
New Orleans, Louisiana**

Chairman Mike Johnson called the meeting to order on Monday, August 17, 1998, at 3:00 p.m. The following were in attendance:

Members

Chuck Adams, UF Sea Grant, Gainesville, FL
Mike Brainard, MDMR, Biloxi, MS
Pete Cooper, Jr., Salt Water Sportsman, Buras, LA
Steve Hein, LDWF, Bourg, LA
Rebecca Hensley, TPWD, Corpus Christi, TX
Mike Johnson, FDEP, Marathon, FL
Dennis Johnston, TPWD, Austin, TX
David Ruple, Nature Conservancy, Grand Bay, AL

Staff

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

Adoption of Agenda

M. Johnson moved to accept the agenda as written. D. Ruple seconded the motion, and the agenda was adopted as presented.

Approval of Minutes

Chairman Johnson asked the group to review the June 15-17, 1998 minutes from Rockefeller Refuge in Louisiana. P. Cooper noted a correction to the minutes (mailing lists, etc.) from "Saltwater" to "Salt Water" Sportsman. With this correction, M. Johnson moved to adopt the meeting minutes. R. Hensley seconded the motion which passed by consensus.

Review of Section Progress

All agreed that the document will not be finalized in time to present to the Technical Coordinating Committee in October 1998. The group anticipates finalization in early 1999 and presentation to the TCC in March 1999.

**FLOUNDER TTF
MINUTES
August 17-20, 1998
Page 2**

General Production Notes:

- Use % rather than percent.
- Leave landings in pounds rather than converting to metric. If an explanation is needed why the document uses both, write an explanation in the document summary that landings are conventionally given in pounds.
- Change hrs to h on the abbreviation page.
- Use ‰ rather than ppt.
- User flounder, not flounders.
- Do not hyphenate exvessel.
- Cotermious = conterminous = contiguous.
- Add PPI (producer price index) to the abbreviations page.
- The use of fishers is acceptable. Do not use harvesters.
- Task Force List - change Steve Hein to Stephen Hein, change Saltwater Sportsman to Salt Water Sportsman under Pete Cooper, Jr.

Cover Art - D. Johnston presented the final cover art. The entire group was very pleased with the final work, and GSMFC staff will send a letter of appreciation to the artist, Clemente Guzman, TPWD graphics art division. Mr. Guzman will also be recognized in the acknowledgments.

Section 3 - Send any editorial comments to M. Johnson for revision. S. VanderKooy will call M. Van Hoose to request Alabama's missing information for this section.

Section 4 - Using the computer projection unit, the task force reviewed and provided a line-by-line edit of this section.

Section 5 - With the exception of Louisiana, each state representative needs to draft a brief description of each states' CZM program.

Section 6 - Minor editing has been done to the draft provided by M. Van Hoose. Each state representative will provide their respective state information to the GSMFC office for incorporation. C. Adams and M. Johnson agreed to jointly work up Florida's portion. S. VanderKooy - note where gear types were combined.

Section 7 - C. Adams reported that the section had been revised to include 1996 and 1997 data. The section was also reorganized, and he incorporated previous comments from the task force. Task force members will provide C. Adams with any additional comments for incorporation.

**FLOUNDER TTF
MINUTES**

August 17-20, 1998

Page 3

Section 8 - The section was distributed, and task force members briefly reviewed this section. Comments will be sent to S. VanderKooy for incorporation. Note where gear types were combined. The group agreed that yes, Section 8.2, is "flaky." Subworld is one word.

Next Meeting

The next meeting of the Flounder TTF was tentatively scheduled for early December. Although the Rockefeller Refuge is very conducive to a working session, the Maison DuPuy in New Orleans seems a more convenient meeting site for task force members. The main focus of the next meeting will be management considerations and recommendations. All authors will bring sections on disk for onsite editing using the in focus computer projection unit.

Timetable Meeting

The revised timetable is as follows:

October 31, 1997	Drafts to the GSMFC office - complete document to be mailed out to the task force prior to next review meeting
November 17-18, 1997	Review meeting - work session on management recommendations, data requirements, review habitat section for first time
January 1998	Drafts to the GSMFC office for distribution prior to next review meeting
February 25-26, 1998	Review meeting
May 1998	All drafts; all revisions to the GSMFC office
June 15-17, 1998	Review meeting
August 17-20 1998	Review meeting
December 9-11, 1998	Review meeting
December 1998	Cover Art - COMPLETE
February 1999	Final review meeting
March 1999	Presentation to the TCC by <i>Chairman Mike Johnson</i>

**FLOUNDER TTF
MINUTES
August 17-20, 1998
Page 4**

**There being no further business, the meeting adjourned Thursday, August 20, 1998,
at 10:45 a.m.**

**TCC ANADROMOUS FISH SUBCOMMITTEE
MINUTES
Monday, October 12, 1998
San Antonio, Texas**



Chairman Frugé called the meeting to order at 8:35 am. The following members and guests were in attendance:

Members

Doug Frugé, GCFCO/FWS, Ocean Springs, MS
Alan Huff, FDEP/FMRI, St. Petersburg, FL
Jerry Mambretti, TPWD, Port Arthur, TX (*Proxy for Norman Boyd*)
Charlie Mesing, FGFWFC, Midway, FL
Larry Nicholson, GCRL, Ocean Springs, MS
Howard Roggillio, LDWF, Lacombe, LA

Staff

Ron Lukens, Assistant Director, Ocean Springs, MS
Nancy Marcellus, Administrative Assistant, Ocean Springs, MS
Larry Simpson, Executive Director, Ocean Springs, MS
Jeff Rester, SEAMAP/Habitat Coordinator, Ocean Springs, MS

Others

Frank Parauka, FWS, Panama City, Florida
Bob Cooke, FWS, Atlanta, GA
Glade Woods, MDMR, Biloxi, MS

Adoption of Agenda

A. Huff made the motion to adopt the agenda as presented. C. Mesing seconded the motion. The motion passed.

Approval of Minutes

A. Huff moved to approve the minutes from the March 16, 1998 meeting held in Destin, Florida. The motion was seconded by H. Rogillio and unanimously approved.

State-Federal Reports

Alabama - Alabama was not represented at the Subcommittee meeting.

Florida - A. Huff gave an update on the sturgeon working group activities. They had a meeting with representatives from National Marine Fisheries Service (NMFS) and the Fish and Wildlife Service (FWS) to review the concerns of those two agencies regarding Florida's plan to commercially produce sturgeon in the state of Florida. Having heard their comments and some valuable suggestions from Gail Carmody of the FWS, they followed through on the development of another plan that is not so focused on commercial production, but is focused on conservation of sturgeon in Florida. That plan is being drafted. They will meet

again on October 23 in Gainesville, Florida, and will receive comments from the agencies to finalize the plan at that time.

C. Mesing mentioned that a vote will be held on November 4 vote regarding a merger between some portions of the Florida Department of Environmental Protection (FDEP) and the Florida Game and Freshwater Fish Commission (FGFFC). Mesing feels that the merger will happen. He also reported that the FGFFC has a new director, Ed Moyer. Moyer took over in August. At this point, they are waiting to see out how the reorganization comes out. Their new direction will be more customer satisfaction. Efforts with the striped bass program will be limited to areas where they are sure they can be successful, and they will continue to work with the stewardship program. After that, it is hoped that they will maintain a presence to help the FWS and the Gulf with broodstock collection.

A lot of time in the past year has been spent working with the FDEP to develop conditions for a five year dredge program. They have a plan which includes restoring at least four creeks a year that will increase habitat for striped bass in the upper Apalachicola river, which is a limiting factor for striped in that system. Apparently, the permit issue has been put on hold in place of a larger issue which has to do with the water reallocation for the entire Apalachicola-Chattoohatchee-Flint (ACF) system. This is another major issue that will eventually affect striped bass and possibly sturgeon in determining what the allocation formula is going to be in place for Apalachicola Bay. Initially, the plan was to be ready by the end of December, but they are going to ask for a six months extension. It is not known what impact that will have on the dredging permit. The FGFFC will continue to work toward habitat enhancement activities on the system.

Louisiana - H. Rogillio reported that the striped bass project near Indian Creek hatchery has not been successful. The primary reason is that they continue to draw down the reservoir. Louisiana is currently looking at new reservoir called Poverty Point for establishing a broodstock population.

Everything that could go wrong did go wrong during the first year of Louisiana's stewardship project. However, they did find some fish in Tchefuncte River, so they modified their project to include that river. They have two fish equipped with radio tags, but believe that one died. Things look more promising for the second year.

Mississippi - L. Nicholson distributed a handout with details of his striped bass project. He reported that they had a mixed growing season with the Gulf-Atlantic race comparative rearing project. They started out thinking that they had Gulf and Atlantics from the Coosa River and Smith Lake. Through Nick Nichols at the Marion Fish Hatchery, they were told that the eggs and the broodfish looked like Atlantic race that he got out of the Coosa so they sent the fish for DNA analysis at Auburn. Results were received, and they discovered that they had two different Gulf race fish. That makes a comparison between Gulf and Atlantics hard. They subsequently released all the fish from half of their tanks. Fortunately, they were able to get some Atlantic fish from the Natchitoches Hatchery in Louisiana. They stocked the fish and finally got underway the last part of May. Survival looked good. There was a significant difference in size between the two races of fish, attributable to the fact that the fish received from Nichols were in the tank almost 2 months before they got the Atlantic fish from Louisiana. Currently, they have approximately 20,000 fish that will be tagged at the end of October, hopefully prior to the striped bass workshop in Pensacola in mid November.

Nicholson reported that they survived Hurricane Georges very well. They had a backup computer and were fortunate that they did not lose any fish. He has had some of his broodstock for close to 8 years. Water from the bayou came up to the tops of the rearing tanks, but did not flood them.

Mississippi has had a good year for fish tag returns. Almost 500 fish were reported; although no large fish were reported. They have had some significant second hand reports of people catching large fish.

Texas - J. Mambretti, proxy for Norman Boyd, reported that Texas continues to be a nonparticipant in coastal striped bass stocking. Striped bass remains an inland fisheries effort; although, they have seen a few stripers in 1998. Typically, they see stripers in their coastal samplings during flood years, when fish are washed out of the reservoirs. Mambretti also mentioned that Hal Osburn is the new Director of the Coastal Fisheries Division of the Texas Parks and Wildlife Department.

FWS - F. Parauka reported that the FWS funded Ike Wirgin's work on the Ochlocknee River regarding heteroplasmic mitochondrial DNA genotypes. He also reported that Laura Jenkins of the Panama City FWS office is still working on the striped bass outreach brochure. Jenkins has received a number of ideas from the regional office. The FWS produces a fairly standardized product so the brochure will have a particular format.

Parauka recently spoke with Bill Whelen regarding the sonic tag. The tag is still not complete. The technology is there but it has not been developed into a package that can be used. This project has been ongoing for about 6 years, and Lukens asked Parauka what would it take to get the task done. Lukens indicated that the need for the tag is still there, the money has been spent to get it done, and something needs to be done to finalize the project. Lukens was asked to generate a letter from the GSMFC expressing concern on behalf of the Subcommittee to the FWS on the status of the tag, and ask that they try to resolve this issue.

D. Frugé noted that over the last few years they have given a stocking report with a general summary of striped bass stocked over the past year. They did not do it this year because it is incomplete without the Phase 2 information. Jenkins will make a presentation at the spring meeting for the total number of striped bass stocked in each system in 1998.

Frugé reported that the FWS has gone through a reorganization since the middle of August. Officially, in the Southeast region, the Assistant Regional Director position in Atlanta was split. Up to that point the Assistant Regional Directors had a dual function, with both programmatic areas of fisheries, refuges, and ecological services, and supervisory authority over a geographic area. In the middle of August these roles were split and now there is an Assistant Regional Director for fisheries, one for refuges, and one for ecological services. There are other individuals who now supervise the geographic areas. Columbus Brown has been and continues to be the Assistant Regional Director for fisheries. In that role he supervises the fisheries staff at the regional office level, but does not supervise the field staff. Frugé's office is supervised by the geographic Assistant Regional Director for Area 2, Mitch King. Parauka's office is supervised by the Assistant Regional Director for Area 3.

Stuart Jacks, from the Corpus Christi FWS office, has taken another job as supervisor of one of the fishery resource offices in Arizona, so he will no longer serve on the Subcommittee. The Corpus Christi office will probably be moved to San Marcos and their function will be more on inland fisheries issues, primarily dealing with endangered fishes in inland Texas areas. It is likely that there will not be any fishery resource office activities in coastal Texas anymore.

At the last Subcommittee meeting there was some discussion regarding Alabama shad. Parauka and G. Carmody brought up the issue of the Alabama shad status report that the Panama City office initiated in 1994, authored primarily by Jim Barkuloo. The basic data that went into that report came from a questionnaire administered by the Jackson Ecological Services office and from historical information. Panama City took the data and information and developed a report that was sent out for review throughout the range of the Alabama shad. Results of that review were received and the report was revised and submitted for possible

publication in 1996. It came back rejected with some recommendations for improving the report; however, the report was never revised and resubmitted. Since the last Subcommittee meeting, Frugé has reviewed that report and concluded that there should be a review of museum collections to find some distributional information. Dr. Stuart Poss, Gulf Coast Research Laboratory, has started a project to review museum collection data, not just for Alabama shad, but for a number of different species in the Gulf. He has compiled a fairly extensive list of collection data for Alabama shad. Frugé suggested that he utilize a geographic and time series analysis to look at frequency of collections over the years, which might provide some indication of population status and geographic range. He has been talking with Dr. Poss and Jim Barkuloo about that concept, and they tentatively agreed that it would be a good approach. There is a need to contact some additional universities and fish collections throughout the country that may have Alabama shad information not in his database. Frugé's office, in conjunction with the Baton Rouge fishery resource office, employed a student trainee this year who is working on a Master's Degree at the University of Memphis. Frugé is working with Dr. Poss to get the student involved in looking for additional data. Once that is done, another draft of the report can be initiated.

Lukens added that a copy of the summary and recommendations section of the original draft of the Alabama shad paper was distributed to the Subcommittee several years ago. At the last meeting, the Subcommittee was told that the National Marine Fisheries Service was looking at Alabama shad as a potential candidate for listing. Parauka distributed a copy of the *Federal Register* notice addressing potential listings, and Alabama shad is on the list. It is listed fifth in priority for funding. Lukens called the contact person, was told that it is on the list, but that listing the Alabama shad as either as threatened or endangered is not a high priority within the NMFS. One of the problems with striped bass and Alabama shad, and anadromous fish in general, is they do not have a large constituency that produces an economic impact. On the other hand, when looking at ecosystems issues, anadromous fish are the ones that span the gamut of habitat types, migrating from saltwater to freshwater, utilizing a larger spectrum of habitat types, and can be very good indicators of the overall health of a system. The Subcommittee agreed to support Frugé's suggestion about redoing the Alabama shad report. Once the report is completed, the Subcommittee may want to consider recommending that a fishery profile or management plan be developed.

The following is an excerpt of the summary and recommendations section of the original draft of the Alabama shad paper:

Summary

1. Present distribution of Alabama shad appears to be correlated with the location of dams which serve as effective barriers to upstream spawning migrations.
2. Based upon existing data, Alabama shad abundance appears to have diminished in several drainages within its historical range during the past 20 years.
3. Reproducing populations still inhabit the Mobile, Conecuh/Escambia, Choctawhatchee, Apalachicola, and Suwannee rivers in Alabama and Florida.
4. Some Alabama shad reproduction apparently occurs in the lower Mississippi River Valley below migration barriers.

Recommendations

Future studies are needed to address management and protection measures for Alabama shad. These studies should be designed to:

1. Determine presence and abundance of Alabama shad throughout its historical range, especially in the lower Mississippi and Alabama river basins.

2. Learn more about migrations, reproductive behavior, habitats, and age and growth of Alabama shad.
3. Give more emphasis to studies of Alabama shad in marine and estuarine habitats.

Timing and location of sampling efforts and types of sampling devices should be prime considerations when scheduling Alabama shad collection efforts.

Stewardship Project Issues

D. Frugé stated that he had nothing specific to report and this item was put on the agenda to address any administrative concerns of project participants. Frugé noted that he has received progress reports from all participants except LSU. He will be using those progress reports to develop a report to be submitted to the Washington office. FY99 is last fiscal year for the stewardship program, but the projects will continue on into the year 2000.

Gulf Striped Bass Database

R. Lukens reported that he has just submitted his 1999 Sport Fish Restoration work plan to the FWS office, and one task in that plan is the continuation and maintenance of the striped bass database. It is important to continue to get as much information into the database as possible, particularly on the genetics and on the locations where people are finding the fish. Ultimately, Lukens would like to use the GIS project as a framework to apply the information about striped bass and be able to use it in a GIS format to create spatial relationships where striped bass are being caught, what sizes they are, and what genetic strain they are. Work will continue to update the database, but Lukens emphasized that it can only be updated if information is sent to him.

Striped Bass Fishery Management Plan Review

Lukens reported that the Subcommittee's request at the last meeting 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. The issue is related to priorities for additional FMP development. There is a list of species that was developed in priority order, and because of the mechanism that has been used in the past to deal with the Striped Bass FMP, striped bass was never included in that priority listing. In the 1999 work plan there is an activity to do a comprehensive review of the existing FMP and Amendment 1. From a process perspective, the revision will completely take precedence over the original FMP and Amendment 1. Beginning in 1999 work will begin to conduct a detailed review of all the sections in the FMP, comparing format and content to some of the other FMPs that the Commission has developed under the interjurisdictional fisheries management program. This will make it more consistent with the FMPs that are currently being developed. The timing is such that if the review is conducted in 1999, the Subcommittee would be in a position to revise the FMP in the year 2000 if approval is received from the State-Federal Fisheries Management Committee. The review will be an effort that points out strengths and deficiencies in the current format and content of the FMP. Lukens will work with the Chairman to discuss the process.

Gulf Sturgeon Activities

Frugé reported that Todd Slack, a University of Southern Mississippi Ph.D. student (on staff of the Mississippi Museum of Natural Science in Jackson) has been conducting a movement and habitat study on Gulf sturgeon in the Pearl and Leaf river systems. The project started in 1997. They conducted sampling with nets in the spring and fall of 1997, and did not capture any sturgeon in the Pearl; however, they collected

4 adult sturgeon from Bouie River near Hattiesburg. They were all captured within a 6 day period in the spring of 1997. They put radio transmitters in 3 of those fish and monitored their movements. For the most part, the fish stayed in that general area, but eventually left the area. They were not able to pick up any of the signals in the fall so they were not sure exactly what happened to the fish. They continued their study in 1998 and captured 7 additional Gulf sturgeon during the spring and put radio transmitters in those. By June, all but 2 of those fish had migrated downstream to the vicinity of the Big Black Creek, which is a tributary of the Lower Pascagoula. They noted some variable movement patterns in the mouth of Big Black Creek throughout the spring. They sampled again in the June-August period in the Big Black Creek area and Lower Pascagoula. Those sampling efforts yielded an additional 23 Gulf sturgeon and those were all equipped with external Floy or PIT tags, and 9 of those were equipped with external radio tags. Based on those tagged individuals they noted extensive movement along Big Black Creek from the confluence of Red and Black creeks downstream to its confluence with the Pascagoula. As of September 22, they had observed no movement of fish to the Gulf, all of their tagged sturgeon remained in the freshwater portion of the Pascagoula or in the gravel pit areas of the Bouie River. In 1998 they also deployed some artificial substrates samplers in the Bouie River to try and collect eggs. They did collect 4 Gulf sturgeon eggs in that area, potentially documenting a spawning area in the Pascagoula. They will continue their work in 1999. Objectives for 1999 are:

1. Monitor entry of previously radio-tagged sturgeon into the Pascagoula River during the spring sturgeon migration.
2. Sample for sturgeon in the Pascagoula River during the spring migration period or once they have reach potential spawning or holding sites. Captured sturgeon will be equipped with external radio transmitters (freshwater phase) and sonic tags (saltwater phase).
3. Identify and describe potential spawning sites by tracking marked adult fish.
4. Verify spawning sites by deploying egg samplers in the presumed spawning areas.
5. Track radio-tagged fish and evaluate habitat.
 - A. Describe summer and fall (freshwater) habitat use and movement patterns.
 - B. Describe the winter (saltwater) habitat use of and movement patterns in the Pascagoula Bay and Mississippi Sound.

The work is being funded through FWS Section 6 funds.

F. Parauka distributed copies of a progress report on the sturgeon recovery plan. He reported that a lot of things have been done, but the recovery of the Gulf sturgeon is going to be a slow process. They have looked at some of the issues that were priority issues. From this, they organized and held a workshop for sturgeon researchers in Biloxi, Mississippi, this past summer. That meeting was designed to discuss the issues and activities in the river systems. They found that work is needed to evaluate the populations on the different river systems. Nobody has a conclusive information as to the status of populations in these particular systems.

There was some discussion on a couple of other issues mentioned in the recovery plan. The Subcommittee came up with 4 issues that could possibly be elevated. Those are: 1) fish passage; 2) risk assessment of non-indigenous species related to aquaculture activities; 3) stock assessment on Suwannee river; and 4) bycatch assessment.

Parauka mentioned that Carmody would like comments from the Subcommittee on the sturgeon recovery plan progress report. Lukens asked that the notation of GSMFC as the lead agency and funding source on Page 2, Task #2.1.2, "Species considered in fish excluder device evaluation", be removed from the report.

The Subcommittee felt that the report was beneficial and represents progress made toward achieving the goals and objectives of the Gulf Sturgeon Recovery Plan. Each state review it for specific recommendations. **A. Huff made a motion to endorse the Gulf Sturgeon Recovery Plan status report provided by the FWS and recommend that the Commission will send a letter to Gail Carmody at the Panama City FWS office endorsing the progress report and commending the staff on their excellent work. The motion was seconded by L. Nicholson and unanimously approved.**

Parauka reported on the status of a Gulf sturgeon video. The video was supposed to be taped on Wednesday; however, the video is rescheduled for May 1999, when conditions improve. Betty Wells from Texas is producing the video, which will be a 15-20 minute piece on Gulf sturgeon to use for presentations to schools, rotary clubs, etc.

Gulf Striped Bass Workshop

The Subcommittee received handouts of the proposed attendance list and preliminary agenda for the Gulf Striped Bass Restoration Workshop to be held November 18-19, 1998, in Pensacola, Florida. The workshop has a very ambitious agenda and Lukens and Frugé are working on the format. Lukens mentioned that a key to the discussion and wrap up will be implications that will affect the revision of Striped Bass FMP and the future of the stewardship projects.

Lukens thanked the Fish and Wildlife Service for providing the funds to conduct the workshop.

Other Business

There was no other business to discuss.

Election of Chairman

D. Frugé was elected Chairman and C. Mesing was elected Vice-Chairman.

There being no further business, the meeting adjourned at 3:10 pm.

**JOINT TCC CRAB SUBCOMMITTEE AND
BLUE CRAB TECHNICAL TASK FORCE (TTF)
MINUTES**

**Monday and Tuesday, October 12-13, 1998
San Antonio, Texas**

Chairman V. Guillory called the meeting to order at 1:08 p.m. on Monday, October 12, 1998. The following members and others were present:

Members

Vince Guillory, *Chairman*, LDWF, Baton Rouge, LA
Bruce Buckson, FDEP, Tallahassee, FL
Ed Holder, Outdoor Editor, Groves, TX
Traci Floyd, MDMR, Biloxi, MS
Leslie Hartman, ADCNR/MRD, Dauphin Island, AL
Charles Moss, Lake Jackson, TX (*proxy for E. McCulla*)
Butch Pellegrin, NMFS, Pascagoula, MS
John Petterson, IAI, La Jolla, CA
Tom Wagner, TPWD, Rockport, TX

Others

Stevens Heath, ADCNR/MRD, Gulf Shores, AL
John T. Jenkins, ADCNR/MRD, Dauphin Island, AL
Jerry Mambretti, TPWD, Port Arthur, TX
John P. O'Connell, Sea Grant Extension Service, Port Launca, TX
Jerry Waller, ADCNR/MRD, Gulf Shores, AL

Staff

Larry B. Simpson, Executive Director, Ocean Springs, MS
Ronald R. Lukens, Assistant Director, Ocean Springs, MS
Steve VanderKooy, Program Coordinator, Ocean Springs, MS
Jeffrey K. Rester, Program Coordinator, Ocean Springs, MS
Cindy Yocom, Staff Assistant, Ocean Springs, MS

Adoption of Agenda

T. Wagner moved to adopt the agenda as presented. T. Floyd seconded, and the motion passed.

Adoption of Minutes

The minutes of the August 4-7, 1998, meeting in New Orleans, Louisiana, were reviewed. **Several comments were noted, and T. Wagner moved to approve the minutes as corrected. C. Moss seconded the motion which passed.**

Blue Crab TTF Membership

The group welcomed Leslie Hartman to the Task Force and Subcommittee. On August 26, 1998, Vernon Minton (Director ADCNR/MRD) appointed Mrs. Hartman as Alabama's representative to both groups. This appointment removes long-time member, Stevens Heath, who has accepted more administrative responsibilities within the state. **T. Wagner moved to approve Mrs. Hartman's appointment, and C. Moss seconded. The motion passed.** Mr. Moss noted the change in Alabama's representation with a poem:

*Yesterday, upon the stair
I met a man who wasn't there.
He wasn't there again today,
Oh, how I wish he'd go away.*

*Stevens Heath's empty chair
proved once again he wasn't there.
He isn't here again today,
I hope Leslie's here to stay.*

Geryonid Profile Update

Due to Hurricane Georges, Ms. Perry was unable to attend the meeting. No report.

Mortality Symposium Budget

The Blue Crab Mortality Symposium is scheduled in conjunction with the Crustacean Society Summer Meeting, May 26-30, 1999. V. Guillory distributed a list of tentative manuscripts. To avoid delay in publication of the proceedings, all papers will be submitted at the meeting. The papers will be reviewed by a panel of three to four peers. Guidelines and deadlines will be included within the society's meeting announcement. As requested by the TCC in March, a detailed budget has been prepared and revised for review and action. **T. Wagner moved to present the budget for TCC approval. T. Floyd seconded the motion which passed.**

Texas Limited Entry Overview

T. Wagner reported on Texas's limited entry program. On June 20, 1997, Governor Bush signed into law House Bill 2542. This bill authorized the Texas Parks and Wildlife Commission to create a license limitation plan for the Texas commercial crab fishery with the goal of improving the economic stability of the commercial crab fishery while providing long-term conservation for crab stocks. The plan became effective September 1, 1998. Important elements of the plan include: *Eligibility*. An individual must have held simultaneously commercial crab trap tags, a valid general

commercial fisherman's license, and a commercial boat license during the period September 1, 1995 through November 13, 1996 to be eligible to participate in the fishery beginning September 1, 1998. *License Renewal.* Purchase of commercial crab fisherman's license during the 1998-1999 fishing year is mandatory for renewal of the license in the 1999-2000 fishing year. *Review Board.* Individual hardship or appeals cases may be heard by the Crab License Management Review Board composed of crab industry members elected by their peers. *License Transfers.* There are a number of restrictions on license transfers.

T. Wagner reported that 315 fishermen met the criteria, and 240 licenses were sold. However, some fishermen bought more than one license (up to three licenses are allowed per fisherman). The review panel has reviewed over 90 appeals; approximately 45 were approved.

T. Wagner also reported that the legislature mandates that the license buy-back program begin by September 2001. This program will be funded by license sales; 20% of the cost goes into the buy-back fund. Private donations are also authorized for the program.

State Reports

Florida - P. Steele was unable to attend the meeting. Bruce Buckson, law enforcement representative, noted a problem in the Keys wherein commercial fishermen were using blue crab traps to harvest lobster during the closed season. The limited entry program for the stone crab fishery is moving slowly.

Alabama - L. Hartman reported that Alabama's landings are up from their 2 million pound average. In 1997, landings were 3,453,000 pounds. With two exceptions (1984 and 1998), these are the highest landings since 1981.

Mississippi - T. Floyd reported that Mississippi's hard crab landings are up slightly at 680,000 pounds, and 1,600 pounds of soft crab in 1997. Mississippi's Blue Crab Task Force has met five times and are proposing their first changes to the crab ordinance. The Task Force has proposed a recreational license and prohibiting night-time crabbing. The Task Force has discussed degradable panels and escape vents, and some fishermen are protecting diamond-back terrapins by voluntarily using TEDs on their crab traps.

V. Guillory noted that Dr. Rosenberg from the Chesapeake Bay area designed a six-foot high trap to sample terrapins in shallow water. He recommended that recreational crab fishermen use this type trap since they generally fish in shallow water anyway. Dr. Rosenberg has published a paper on diamond-back terrapin mortality in crab traps. V. Guillory added that this subject is not going to go away and predicts the environmentalists will begin pushing the issue. In New Jersey, there are already certain areas where traps are prohibited and TEDs are required in other areas.

Louisiana - V. Guillory reported that from January to July 1998, Louisiana harvested 21.6 million pounds of hard crabs. These numbers are below 1991 and 1992 landings for the same period but are equal to 1993 landings. Of course, these landings are preliminary and may change. This is the first year for mandatory escape rings in Louisiana, and in talking to fishermen and dealers, the size of

crabs have increased. Most are pleased with this rule because the fishermen and dealers are getting a better grade of crabs. A few peeler fishermen have complained; however, the escape rings can be blocked March 1 through June 30 and again from September 1 through October 30. Therefore, the peeler fishery is protected.

Beginning January 1, 1999, all wholesale/retail dealers will have to provide information for every transaction. Each time seafood is purchased from a commercial fisherman, the dealers will provide information such as fisherman, date, type species, area fished, gear used, pounds, and value. After 1999, Louisiana will have trip ticket information for the blue crab fishery including how many fishermen are actually fishing. They anticipate problems in that it is a new system; some dealers have complained loudly.

V. Guillory distributed several papers including those published from the Blue Crab Symposium. Two galley copies were distributed, one on turtle excluder devices in crab traps and one on mesh size evaluations. These will be published in *Marine Fisheries Review*. The editor of this publication has also asked Guillory to write a review on the history of crab traps. He will need input from the Subcommittee for this project (probably late next year).

V. Guillory provided an update on the Chesapeake Bay stock assessment for blue crabs. There are now two reports. One group from Maryland, Connecticut, Virginia, and NOAA provided a stock assessment and found that the stocks were healthy and not being overfished biologically. This report was submitted to the Chesapeake Bay Program. Recently, another report was submitted (again, to the Chesapeake Bay Program) by Thomas Miller and Ed Hood. Their findings were different, and state landings were adjusted. V. Guillory distributed the more recent report and asked that comments be sent to him.

Texas - T. Wagner reported preliminary landings through July 1998 at 2 million pounds for hard crabs. Overall annual landings in 1997 were 5.7 million pounds. Other than the new license and limited entry programs, there are no new proposed regulations that will affect the blue crab fishery.

FMP Progress and Needs

Economic Section - S. VanderKooy reported that the section author has the data but has not produced a draft to date. The group requested S. VanderKooy contact Dr. Keithly again to stress the importance of completion.

Stock Assessment - B. Pellegrin presented progress on the stock assessment. The natural mortality rates used are within the convention used by the ICES. This was clarified by adding a statement in parentheses assuming that maximum age is at six years and the ICES convention was used. Population biomass, catch, amount of fishing effort, and natural rate of increase were taken into consideration when defining the surplus production model. Assumptions made include that the population is at a steady state, the age distribution is stable, there are constant rates of recruitment, and the fishery operates on the stock such that surplus production is removed at the same rate it is produced. Criticisms addressed include that the model does not consider events within the

population, growth equations do not represent actual population growth because the time lag between spawning and recruitment is assumed to have a negative effect on population growth, the model does not treat changes in year class strength, and the model is poor at locating MSY unless stock size has been reduced to $B_{\infty}/2$ for several years of the data base.

B. Pellegrin reminded the group that recruitment, mortality, and growth are constant for this model. MSY is an estimate and may change over time. A written report will be forthcoming as soon as possible.

Species Biology - H. Perry was unable to attend the meeting; however, a revised draft was distributed. All comments should be sent directly to the author.

Sociological Section - J. Petterson distributed copies of the summary statistics from the Gulf of Mexico Blue Crab Fisherman Survey. The document contains the summary frequency and distribution statistics and is developed independently for each state. A compiled version that will integrate the results for discussion of gulf-wide characteristics is being developed. The blue crab fishermen survey response rates are as follows:

	Number Distributed	Number Returned to Sender	Number Returned to IAI	Number of Valid Surveys	Response Rate
Alabama	350		52	52	15%
Florida	715	19	265	254	36%
Louisiana	2,550		585	507	20%
Mississippi	119		23	20	17%
Texas	553		107	95	17%
Totals	4,287	19	1,032	928	22%

The phone survey is progressing, and 100 people have been called. The protocol being used is a series of prompts to obtain information. This will help to fill in the gaps in information not received from the mail survey. J. Petterson noted that he needs help getting information from the Asian component of the fishery. There was some concern that this would skew the survey. J. Petterson explained that it would not because the database currently represents the Caucasian fishery component. State representatives will send in names and numbers of Asian fishermen to J. Petterson by October 27. State representatives also need to send the number of returned surveys to Petterson. All state representatives are asked to review the raw data and provide comments. Specifically: Look over the open-ended responses and review categories (e.g., limited entry - Alabama fishermen look at income but Louisiana fishermen look at the number of traps). Should different issues be weighed differently or should he use the standard 50% for all? Check the protocol. Are there any issues that are not reflected?

The sociological description within the FMP will provide a summarization of the data along with a reasonable amount of graphs and tables to assist the reader in visualizing the description. Although J. Petterson will provide input regarding recommendations, all representatives will review the final description and determine appropriate management recommendations.

Fisheries Section - V. Guillory provided a revised draft. All representatives are requested to review and provide comments directly to the author.

General Comments - Send comments on the habitat section directly to P. Steele. Send comments on the regulations section directly to T. Wagner. Provide comments on the management considerations (section 9) and recommendations (section 10) to V. Guillory. T. Wagner suggested that Table 10.1 be prioritized at the January meeting. Recommendation number 2 in section 10.7.1 was not deleted at the last meeting; it was highlighted for discussion. Each section author should provide a list of acronyms and definitions for their sections. When making comments to other sections, mark those words you feel should be defined.

Timetable and Next Meeting - The group agreed that the document should be complete in early December so that Gulf States staff can compile and copy the document well in advance of the January edit session. The edit session will be held January 18-22, 1998, at Rockefeller Refuge in Grande Chenier, Louisiana.

Election of Officers

T. Wagner moved that V. Guillory be elected technical task force chairman and H. Perry be elected subcommittee chairman. L. Hartman seconded the motion which passed by unanimous acclamation.

There being no further business, the meeting adjourned on Tuesday, October 14, 1998, at 11:05 a.m.

APPROVED BY:

Richard Waller

COMMITTEE CHAIRMAN

**SEAMAP SUBCOMMITTEE MEETING
MINUTES**

Monday, October 12, 1998

San Antonio, Texas

Chairman R. Waller called the meeting to order at 1:08 p.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

Kenneth Savastano, NOAA/NMFS, SSC, MS
Ken Stuck, USM/IMS/GCRL/COA, Ocean Springs, MS
Butch Pellegrin, NMFS, Pascagoula, MS
Charles Lavarini, NMFS/SEFSC, Miami, FL

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

Adoption of Agenda

J. Shultz stated the Plankton Work Group has a request of the Subcommittee, and this will be done under Other Business. With this change, the agenda was adopted.

Approval of Minutes

Under "Discussion of Real-time Mailings," add "they claim it" before causes pulse fishing. Under same heading, take out preliminary data and replace with "consequences of shrimping efforts and/or landings" of not publishing, and in the last line of the paragraph change suppose to supposed. Under "Other Business" the last sentence should read: "They've also sampled 1,000 fish west of the river but no tagged fish were recovered." **With these changes, J. Hanifen moved to approve the August 7, 1998 minutes. J. Shultz seconded and it passed unanimously.**

Administrative Report

J. Rester reported the proposal for the GSAFDF was mailed and has been received in the Foundation's office. A decision should be made within the next 8 weeks. A copy of the proposal is in the folders. R. Leard stated S. Branstetter, who was the GSAFDF Program Director, resigned and this may slow progress on the final decision for the proposal.

The TCC report was completed and will be distributed at this meeting. A copy of the report is in the folders for the Subcommittee.

J. Nance was unable to attend this meeting to give a report on the consequences of not publishing the real-time data but he is willing to present the information at the next meeting in March. The Subcommittee asked J. Rester to send a letter to J. Nance asking him to present the information at the next meeting.

J. Rester asked the Subcommittee to send all data to K. Savastano as soon as possible after each cruise. He also asked the Subcommittee to send him a cruise report after each cruise.

All the data is in for the 1997 Atlas and processing should be completed by the end of the year.

J. Hanifen reported that Louisiana did the Fall Plankton Survey after Hurricane Georges and only missed one station. He also reported that Louisiana will not use the PELICAN next year for cruises and plans to book the TOMMY MUNRO.

D. Donaldson reported ASMFC has more of the Bottom Mapping CD's available if anyone is interested in obtaining one. J. Rester will ask ASMFC to mail a CD to J. Shultz and J. Hanifen. The ASMFC also has an extra 14K available and they want to have a meeting in St. Petersburg at the FMRI with the SEAMAP Chairmen, Coordinators, D. Donaldson and H. Norris to discuss developing a web page for the SEAMAP data so it will be more accessible. G. White will contact all participants on the exact date which will be sometime in December. A report on the outcome of this meeting will be given at the March meeting.

T. Cody asked if the Reef Fish Survey is still planned for June. J. Shultz said that it is scheduled for April 13 - June 10 on the GORDON GUNTER. T. Cody also said that TPWD will volunteer biologists to go on SEAMAP cruises so if they are needed, let them know as soon as possible.

Discussion of Red Snapper Real Time Data

J. Rester reported that D. Hanisko has adjusted the SEAMAP software in order to do red snapper real-time data mail-outs for the fall cruises. J. Shultz said to use #5 - the harvestfish code, on the data sheets. She also said that because of the electronic measuring boards they are using, and the finfish measuring is different than shrimp, they are not able to obtain length frequencies for real time but will be able to get the information at the end of the cruise. After discussion, the Subcommittee decided to do just one real-time red snapper mailing at the end of November. The information will be posted on the web and mailed to the "special list" of the real-time shrimp mailings. This list includes state agencies, Sea Grant extension agents, biologists, etc. A post card with return postage will also be included with the mailing asking if the information is useful and would they like to receive this on a regular basis.

Calibration Comparisons Between Vessels

B. Pellegrin gave a brief summary of the analysis of the comparison tow data to date. He stated that in looking at all the comparative tow data, there is little to no significant differences of catch rates between the vessels. He will give a presentation of the final results at the March meeting.

Proposal for the Gulf and South Atlantic Fisheries Development Foundation

J. Rester reported the proposal was developed via conference calls and it was submitted on time. If the proposal receives funding, Johnson Controls will be the subcontractor. Hopefully, a decision will be made by GSAFDF by the end of November. K. Stuck stated he is involved with the Gulf of Mexico Stock Enhancement Program and they are also doing red snapper work. He asked the Subcommittee to keep the lines of communication open with this group so they can exchange information and not duplicate efforts. He also asked if he can have the samples collected to use for his genetic work. Jeff Lotz and Paul Chebu are the contact people for the Stock Enhancement Program and K. Stuck will send J. Rester their telephone numbers.

The Subcommittee then discussed the possibility of the proposal not getting funded. They then directed J. Rester to research alternative funding sources and report to them. R. Waller asked the Subcommittee to keep thinking about this proposal and thinking of different ways to gear it towards different funding groups.

Work Group Reports

Data Coordinating - K. Savastano distributed the Data Management report (Attachment I) which covers the period March 1998 through present. Processing of the SEAMAP 1997 data is complete and processing for the 1998 data and 1982-1987 Gulf data is in progress. The data base access training for the Gulf participants has been completed. Processing of the 1997 Atlas is in progress. 223 data requests have been received to date and all has been completed. The development of the ORACLE data base software is in its final stage. Re-engineering 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 422 cruises with a total of 2,729,283 records.

Environmental Data - M. Kasprzak was not present but J. Hanifen said she is in the process of making final changes on the Environmental Data Work Group Report/Manual and asked the Subcommittee to send any changes to her as soon as possible for incorporation. She should have the final copy at the March meeting and the Subcommittee will vote on approving the manual.

Election of Chairman

T. Cody moved to elect R. Waller Chairman and J. Hanifen Vice Chairman. S. Heath seconded it and it passed unanimously.

Other Business

J. Shultz reported R. Shaw resigned from the Plankton Work Group due to other obligations and he suggested Mark Benfield be his replacement. **M. Leiby moved to replace R. Shaw with M. Benfield on the work group. S. Heath seconded it and it passed unanimously.** J. Rester will send a formal letter of notification to M. Benfield under J. Shultz's (work group leader) signature.

J. Shultz stated that S. Nichols wanted her to inform the Subcommittee that he recently served on a committee which recommended an outside review on all SEAMAP surveys pertaining to red snapper. She said that if this does continue to be a high priority (and they think it will) NMFS will come up with the funding for the review.

K. Stuck informed the Subcommittee that he now has a graduate student at the SIPAC to work on SEAMAP material exclusively.

R. Waller asked J. Rester to send him the station locations for the fall cruises.

J. Shultz said they did the Fall Plankton Survey in September but due to the bad weather, they only collected about 1/3 of the samples that they normally collect.

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

October 1, 1998

SEAMAP DATA MANAGEMENT

A. Data Processing Status

Status reports for the 1982 through 1998 SEAMAP data are shown in Attachments 1-12. 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 1997 data is complete. Data processing of the 1998 data and 1982-1987 Gulf data is in progress. SEAMAP data base access training for the Gulf SEAMAP participants has been completed.

B. Gulf Atlas Processing

Processing of the 1997 Atlas is in progress.

C. Data Requests

Two hundred and twenty-three SEAMAP requests have been received to date. All requests have been completed. Fourteen requests were filled since October 1997.

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. Integration testing between the p.c. and main frame software for five cruise of test data was completed in January 1998. Integration testing for an entire year (1996) of data was initiated in February 1998 and is complete. Processing of 1994, 1995 and 1997 SEAMAP data is in progress..

E. On-line Data Base Status

Status of the SEAMAP data as of October 13, 1997 is shown in Attachment 13. The SEAMAP on-line data base had 375 cruises with a total of 2,498,051 records (approximately 99.3 megabytes of data). Since October 1997, forty-seven cruises were processed through version 3.3 and added to the on-line data base as shown in Attachment 14. The SEAMAP on-line data base now contains 422 cruises with a total of 2,729,283 records (approximately 108.7 megabytes of data).



Kenneth Savastano
Data Manager

ATTACHMENT 1

SEAMAP 1982

DATA SOURCE	VESSEICRUISE	INVENTOR STATUS	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	3	13	11	86	11	*1	*1	*1	*1	*1	*1	121	3.0	17-Jun-94
MS	17 821	3	21	21	415	20	1365	*1	*1	*1	*1	*1	1842	3.2	18-Apr-96
US	4 127	3	273	203	5391	244	*1	*1	*1	*1	71	222	6333	3.3	11-May-96
TOTAL			307	235	5892	275	1365			71	222		8296		

SEAMAP 1983

DATA SOURCE	VESSEICRUISE	INVENTOR STATUS	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	3	18	18	217	18	*1	*1	*1	*1	*1	*1	271	3.0	27-Jun-94
MS	17 831	3	28	14	385	14	*1	14	832	*1	12	35	1320	3.2	18-Apr-96
US	4 135	3	283	195	4343	248	*1	*1	*1	*1	57	162	5211	3.3	09-Jul-97
TOTAL			307	227	4945	280		14	832	69	197		6802		

SEAMAP 1984

DATA SOURCE	VESSEICRUISE	INVENTOR STATUS	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	3	10	10	120	10	613	*1	*1	*1	*1	*1	763	3.0	27-Jun-94
MS	17 841	3	24	24	357	24	*1	6	165	*1	*1	*1	600	3.2	17-Aug-95
MS	17 842	3	10	*1	*1	*1	*1	*1	*1	10	30		40	3.1	25-Jul-95
US	4 145	3	289	220	5596	259	11816	186	5093	*1	68	204	23663	3.1	04-Dec-96
TOTAL			333	254	6073	293	12429	192	5258	78	234		25066		

SEAMAP 1985

DATA SOURCE	VESSEICRUISE	INVENTOR STATUS	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	3	20	18	286	20	*1	5	68	*1	2	4	421	3.0	22-Oct-93
AL	23 852	3	11	11	226	10	237	6	22	*1	*1	*1	523	3.0	22-Oct-93
MS	17 851	3	36	31	754	31	*1	27	474	*1	5	15	1368	3.1	23-Feb-95
MS	17 852	3	60	40	893	40	1839	*1	*1	*1	20	60	2932	3.1	05-May-95
MS	17 853	3	42	40	960	42	2752	40	1327	*1	2	6	5209	3.1	13-Jun-95
MS	17 854	3	16	15	290	15	785	*1	*1	*1	5	15	1136	3.1	19-May-95
US	4 153	3	355	317	6737	191	5226	292	15972	*1	38	112	29202	3.2	28-May-96
US	4 156	3	411	407	9261	322	19609	188	5261	*1	2	5	35464	3.2	15-Sep-95
TOTAL			951	879	19407	671	30448	558	23124	74	217		76255		

STATUS CODES:

- *1 NOT TAKEN
- 2 ENTERED IN P.C.
- 3 ENTERED ON MIAMI UNISYS A10 SYSTEM(VERIFIED AND DATA BASED)

ATTACHMENT 2

SEAMAP 1986

DATA SOURCE		VESSEICRUISE	INVENTOR STATUS	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	13	12	210	13	*1	11	78	*1	1	3	338	3.0	13-Oct-93	
AL	23	062	FALL SEAMAP	3	16	*1	*1	16	*1	*1	*1	*1	16	32	64	3.0	28-Oct-93	
AL	23	063	FALL SEAMAP	3	6	6	123	6	44	*1	*1	*1	*1	*1	185	3.0	13-Oct-93	
MS	17	061	BUTTERFISH	3	51	38	817	15	*1	*1	*1	*1	16	46	967	3.1	14-Sep-94	
MS	17	062	SUMMER SEAMAP	3	20	14	378	18	833	12	233	*1	6	18	1526	3.1	11-Jan-95	
MS	17	063	SUMMER SEAMAP	3	14	14	412	12	624	13	165	*1	*1	*1	1254	3.1	17-Jan-95	
MS	17	064	FALL ICHTHYOPLANKTON	3	9	*1	*1	9	*1	*1	*1	*1	9	27	45	3.1	17-Jan-95	
MS	17	065	FALL SEAMAP	3	18	18	327	18	*1	*1	*1	*1	*1	*1	381	3.1	11-Jan-95	
SC	51	061	FALL SEAMAP	3	68	68	1641	68	16326	*1	*1	*1	*1	*1	18171	2.02	03-Feb-93	
SC	51	062	WINTER SEAMAP	3	44	22	532	44	2683	*1	*1	*1	*1	*1	3325	2.02	03-Feb-93	
SC	51	063	FALL SEAMAP	3	70	70	1792	70	9865	*1	*1	*1	*1	*1	11867	2.02	03-Feb-93	
US	4	160	SUMMER SHRIMP/GROUNDFISH	3	214	165	4114	159	4885	128	4574	*1	43	129	14368	3.1	05-Dec-94	
US	4	161	FALL ICHTHYOPLANKTON	3	128	*1	*1	119	*1	*1	*1	*1	91	273	520	3.0	04-Mar-94	
US	4	163	FALL SHRIMP/GROUNDFISH	3	306	305	6025	300	19008	*1	*1	*1	64	192	26136	3.1	26-Oct-94	
TOTAL					977	732	16371	867	54268	164	5048		246	720		79147		

SEAMAP 1987

DATA SOURCE		VESSEICRUISE	INVENTOR STATUS	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	3	1	1	31	*1	*1	*1	*1	*1	*1	*1	33	3.0	26-Jul-93	
AL	23	872	SUMMER SEAMAP	3	12	12	124	12	*1	3	4	*1	*1	*1	167	3.0	08-Oct-93	
AL	23	873	FALL ICHTHYOPLANKTON	3	10	*1	*1	10	*1	*1	*1	*1	10	10	30	3.0	08-Oct-93	
AL	23	874	FALL SEAMAP	3	5	5	42	*1	*1	*1	*1	*1	*1	*1	52	3.0	08-Sep-93	
AL	23	875	FALL SEAMAP	3	8	8	45	8	*1	*1	*1	*1	*1	*1	69	3.0	08-Oct-93	
LA	35	871	SPRING SEAMAP	3	16	16	332	16	4202	*1	*1	*1	14	32	4614	3.3	15-Oct-97	
LA	35	872	SUMMER SEAMAP	3	24	24	533	24	*1	*1	*1	*1	22	57	662	3.3	15-Apr-98	
LA	35	873	SUMMER GROUNDFISH	3	21	21	200	21	*1	*1	*1	*1	21	42	305	3.5	08-Jun-98	
LA	35	874	FALL SEAMAP	3	24	24	482	24	*1	*1	*1	*1	12	29	583	3.5	31-Aug-98	
LA	35	876	FALL GROUNDFISH	3	12	12	245	12	*1	*1	*1	*1	*1	*1	281	3.5	06-Jun-98	
LA	35	877	FALL SEAMAP	3	24	23	537	24	*1	*1	*1	*1	12	34	642	3.5	22-Sep-98	
MS	17	871	BUTTERFISH CRUISE	3	53	53	1349	*1	4310	*1	*1	*1	*1	*1	5765	3.0	04-Aug-93	
MS	17	872	SUMMER SEAMAP	3	76	68	1979	70	3827	41	807	*1	8	24	6892	3.0	06-Dec-93	
MS	17	873	FALL ICHTHYOPLANKTON	3	19	*1	*1	19	*1	*1	*1	*1	19	42	80	3.0	09-Jul-93	
MS	17	874	FALL SEAMAP	3	22	18	488	18	593	*1	*1	*1	4	9	1148	3.0	16-Jul-93	
SC	51	871	SPRING SEAMAP	3	52	52	2065	52	7455	*1	*1	*1	*1	*1	9676	2.02	15-Jan-93	
SC	51	872	SUMMER SEAMAP	3	52	52	2018	52	6919	*1	*1	*1	*1	*1	9093	2.02	19-Jan-93	
SC	51	873	FALL SEAMAP	3	52	52	1811	52	4847	*1	*1	*1	*1	*1	6814	2.02	15-Jan-93	
SC	51	874	FALL SEAMAP	3	54	54	2213	54	5269	*1	*1	*1	*1	*1	7644	2.02	15-Jan-93	
SC	51	875	WINTER SEAMAP	3	52	52	2075	52	5455	*1	*1	*1	*1	*1	7686	2.02	19-Jan-93	
TX	31	871	SUMMER SEAMAP	3	16	16	203	16	877	7	150	*1	*1	*1	1285	3.5	28-Jul-98	
TX	32	871	SUMMER SEAMAP	3	16	16	201	16	943	13	136	*1	*1	*1	1341	3.5	28-Jul-98	
TX	33	871	SUMMER SEAMAP	3	16	16	94	16	292	3	3	*1	*1	*1	440	3.5	28-Jul-98	
TX	34	871	SUMMER SEAMAP	3	16	16	257	16	1180	14	297	*1	*1	*1	1796	3.5	28-Jul-98	
TX	40	871	SUMMER SEAMAP	3	16	16	99	16	279	9	73	*1	*1	*1	508	3.5	28-Jul-98	
US	4	167	SEAMAP SUMMER SHRIMP/GROUNDFI	3	509	463	9063	240	58315	308	7008	*1	44	131	76037	3.0	10-Nov-94	
US	4	169	FALL ICHTHYOPLANKTON	3	91	*1	*1	91	*1	*1	*1	*1	91	273	455	3.0	18-Feb-94	
US	4	171	SEAMAP FALL SHRIMP/GROUNDFISH	3	359	350	7988	163	35358	*1	*1	*1	24	72	44270	3.0	06-May-94	
TOTAL					1628	1440	34454	1094	140121	398	8478		281	755		188368		

STATUS CODES:

*1 NOT TAKEN
 2 ENTERED IN P.C.
 3 ENTERED ON MIAMI UNISYS A10 SYSTEM(VERIFIED AND DATA BASED)

ATTACHMENT 3

SEAMAP 1988

DATA SOURCE		INVENTOR	BIOLOGICAL	ENVIRONMENTAL	GENERAL L/F	SHRIMP L/F	ICHTHYOPLANKTON			TOTAL	SEAMAP	DATE								
VESSEL	CRUISE	STATUS	STATION	SPECIES		STATION	L/F	MERISTICS	SAMPLE	SPECIES	L/F	VERSION	DBASED							
AL	23	881	SUMMER SEAMAP		7	136	7	288	2	7	*1	*1	*1	*1	*1	454	2.02	17-May-93		
AL	23	882	SUMMER SEAMAP		3	4	4	85	*1	*1	*1	*1	*1	*1	*1	140	2.02	17-May-93		
AL	23	883	RED DRUM/KING MACKEREL		3	10	*1	*1	10	*1	*1	*1	10	10		30	2.02	17-May-93		
FL	36	881	SPRING ICHTHYOPLANKTON		3	17	*1	*1	17	*1	*1	*1	17	47		81	2.0	16-Nov-92		
FL	36	882	FALL ICHTHYOPLANKTON		3	36	*1	*1	36	*1	*1	*1	36	107		179	2.0	16-Nov-92		
LA	25	883	SUMMER SEAMAP		3	21	21	195	21	2064	*1	*1	*1	21	21	2343	3.2	30-Jul-96		
LA	25	885	FALL SEAMAP		3	21	21	193	21	1410	*1	*1	*1	21	21	1687	3.2	30-Jul-96		
LA	35	881	SPRING SEAMAP		3	24	24	563	24	7323	*1	*1	*1	11	26	7984	3.1	12-Oct-94		
LA	35	882	SUMMER SEAMAP		3	24	24	571	24	7888	19	328	*1	12	36	8914	3.1	17-Jan-95		
LA	35	884	FALL SEAMAP		3	20	20	489	20	5255	18	278	*1	10	27	6127	3.1	19-Jun-95		
LA	35	886	FALL SEAMAP		3	24	23	668	24	8036	*1	*1	*1	8	24	8799	3.2	12-Aug-96		
MS	17	881	SUMMER SEAMAP		3	47	41	926	47	6200	24	525	*1	6	17	7827	3.0	01-Jul-93		
MS	17	882	FALL ICHTHYOPLANKTON		3	33	*1	*1	33	*1	*1	*1	33	82		148	2.02	04-Jun-93		
MS	17	883	FALL SEAMAP		3	26	23	644	26	4377	*1	*1	*1	3	9	5105	3.0	01-Jul-93		
SC	51	881	SPRING SEAMAP		3	52	52	1593	32	4096	*1	*1	*1	*1	*1	*1	5825	2.02	20-Nov-92	
SC	51	882	SUMMER SEAMAP		3	52	52	1839	50	5518	*1	*1	*1	*1	*1	*1	7511	2.02	01-Dec-92	
SC	51	883	SUMMER SEAMAP		3	52	52	2063	44	9235	*1	*1	*1	*1	*1	*1	11446	2.02	02-Dec-92	
SC	51	884	SUMMER SEAMAP		3	52	52	1988	52	7234	*1	*1	*1	*1	*1	*1	9378	2.02	20-Nov-92	
SC	51	885	FALL SEAMAP		3	52	52	2347	52	8807	*1	*1	*1	*1	*1	*1	11310	2.02	20-Nov-92	
SC	51	886	FALL SEAMAP		3	52	52	2190	52	7501	*1	*1	*1	*1	*1	*1	9847	2.02	01-Dec-92	
SC	51	887	FALL SEAMAP		3	52	52	2223	52	6533	*1	*1	*1	*1	*1	*1	8912	2.02	26-Nov-92	
SC	51	888	FALL SEAMAP		3	52	52	2351	42	7552	*1	*1	*1	*1	*1	*1	10049	2.02	02-Dec-92	
TX	31	881	SUMMER SEAMAP		3	16	16	344	16	1706	13	442	*1	*1	*1	*1	2553	2.02	04-Aug-93	
TX	31	882	FALL SEAMAP		3	16	16	76	16	160	*1	*1	*1	*1	*1	*1	284	2.02	05-Aug-93	
TX	32	881	SUMMER SEAMAP		3	16	16	299	16	1312	14	290	*1	*1	*1	*1	1963	2.02	04-Aug-93	
TX	32	882	FALL SEAMAP		3	16	16	225	16	969	*1	*1	*1	*1	*1	*1	1242	2.02	05-Aug-93	
TX	33	881	SUMMER SEAMAP		3	16	16	117	16	330	5	13	*1	*1	*1	*1	513	2.02	04-Aug-93	
TX	33	882	FALL SEAMAP		3	16	16	247	16	1003	*1	*1	*1	*1	*1	*1	1298	2.02	05-Aug-93	
TX	34	881	SUMMER SEAMAP		3	16	16	144	16	644	10	43	*1	*1	*1	*1	889	2.02	04-Aug-93	
TX	34	882	FALL SEAMAP		3	16	16	210	16	920	*1	*1	*1	*1	*1	*1	1178	2.02	05-Aug-93	
TX	40	881	SUMMER SEAMAP		3	16	16	239	16	905	16	249	*1	*1	*1	*1	1457	2.02	04-Aug-93	
TX	40	882	FALL SEAMAP		3	16	16	131	16	461	*1	*1	*1	*1	*1	*1	640	2.02	05-Aug-93	
US	4	172	STRIPED BASS SURVEY		3	571	374	327	82	*1	*1	*1	*1	176	*2	1354	3.0	20-Jan-94		
US	4	173	SPRING ICHTHYOPLANKTON SURVEY		3	165	*1	*1	165	*1	*1	*1	*1	143	290	1569	2348	4537	3.0	20-Sep-95
US	4	174	SEAMAP SHRIMP/GROUNDFISH		3	408	387	7465	192	40083	220	4850	5	19	57	53667	3.0	11-Dec-93		
US	4	176	FALL ICHTHYOPLANKTON SURVEY		3	168	*1	*1	82	*1	*1	*1	*1	166	159	1464	3126	4999	3.1	26-Aug-94
US	4	177	SEAMAP FALL SHRIMP/GROUNDFISH		3	598	595	12342	210	54937	*1	*1	98	39	117	68897	3.0	02-Dec-93		
TOTAL					2800	2140	43188	1581	202832	341	7025	103	731	1050	3033	5474	269567			

STATUS CODES:

- *1 NOT TAKEN
- *2 NOT ENTERED
- 2 ENTERED IN P.C.
- 3 ENTERED ON MIAMI UNISYS A10 SYSTEM(VERIFIED AND DATA BASED)

ATTACHMENT 4

SEAMAP 1989

DATA		INVENTOR	BIOLOGICAL	ENVIRONMENTAL	GENERAL L/F	SHRIMP L/F	ICHTHYOPLANKTON			TOTAL	SEAMAP	DATE								
SOURCE	VESSEL	CRUISE	CRUISE REPORT TITLE	STATUS	STATION	SPECIES	STATION	L/F	MERISTICS	SAMPLE	SPECIES	L/F	VERSION	DBASED						
AL	23	891	SEAMAP CRUISE AL 891	3	7	7	103	7	363	3	96	*1	*1	*1	*1	*1	586	2.0	19-Mar-92	
AL	23	892	SEAMAP CRUISE AL 892	3	10	10	205	10	991	7	166	*1	*1	*1	*1	*1	1399	2.0	19-Mar-92	
AL	23	893	RED DRUM-KING MACKEREL CRUISE	3	10	*1	*1	10	*1	*1	*1	*1	10	10			30	2.0	19-Mar-92	
AL	23	894	SEAMAP FALL GROUND FISH CRUISE	3	12	12	293	12	1452	11	164	*1	*1	*1	*1	*1	1956	2.0	19-Mar-92	
FL	36	891	SPRING 1989 ICHTHYOPLANKTON	3	25	*1	*1	25	*1	*1	*1	*1	25	75			125	2.0	22-Jul-92	
FL	36	892	FALL 1989 ICHTHYOPLANKTON	3	36	*1	*1	36	*1	*1	*1	*1	36	108			180	2.0	22-Jul-92	
LA	35	891	LA 1989 SPRING SEAMAP	3	24	24	614	24	7914	21	140	*1	8	21			8782	2.0	28-Jul-92	
LA	35	892	LA 1989 SUMMER SEAMAP	3	22	22	439	22	3984	17	292	*1	12	36			4834	2.0	28-Jul-92	
LA	25	893	LA 1989 AREA SUMMER SEAMAP	3	21	21	163	21	1106	11	118	*1	21	24			1485	2.0	28-Jul-92	
LA	35	894	LA 1989 FALL SEAMAP	3	24	24	572	24	4390	24	499	*1	12	36			5593	2.0	28-Jul-92	
LA	25	895	LA 1989 AREA FALL SEAMAP	3	21	21	228	21	1943	11	224	*1	21	42			2511	2.0	28-Jul-92	
LA	35	896	LA OREGON 2 PELICAN COMPARISON	3	10	10	286	10	2719	9	185	*1	*1	*1		*1	3229	2.0	28-Jul-92	
LA	35	897	LA 1989 WINTER SEAMAP	3	16	16	493	16	3635	16	567	*1	7	21			4780	2.0	28-Jul-92	
MS	17	891	SUMMER SHRIMP/GROUND FISH SVY	3	41	34	989	41	7581	20	261	*1	7	21			8988	2.0	31-Oct-91	
MS	17	892	FALL ICHTHYOPLANKTON SURVEY	3	65	*1	*1	65	*1	*1	*1	*1	65	75			205	2.0	30-Oct-91	
MS	17	893	FALL SHRIMP/GROUND FISH SURVEY	3	20	17	568	20	4631	*1	*1	*1	3	9			5265	2.0	01-Nov-91	
SC	51	891	SUMMER 89 SOUTH ATLANTIC	3	212	212	7690	212	12944	179	2299	*1	*1	*1		*1	23748	2.0	08-Jul-92	
SC	51	892	SUMMER 89 SOUTH ATLANTIC	3	106	106	2693	106	5930	48	808	*1	*1	*1		*1	9797	2.0	08-Jul-92	
SC	51	893	FALL SEAMAP 89 SOUTH ATLANTIC	3	212	212	5753	212	9372	116	1902	*1	*1	*1		*1	17779	2.0	08-Jul-92	
TX	31	891	CRUISE 891 GULF OF MEXICO	3	16	16	174	16	575	9	115	*1	*1	*1		*1	921	2.0	18-May-92	
TX	32	891	CRUISE 891 GULF OF MEXICO	3	16	16	323	16	1991	13	709	*1	*1	*1		*1	3084	2.0	18-May-92	
TX	33	891	CRUISE 891 GULF OF MEXICO	3	16	16	354	16	1965	16	546	*1	*1	*1		*1	2929	2.0	18-May-92	
TX	34	891	CRUISE 891 GULF OF MEXICO	3	16	16	268	16	1481	16	651	*1	*1	*1		*1	2464	2.0	18-May-92	
TX	40	891	CRUISE 891 GULF OF MEXICO	3	16	16	205	16	1035	15	382	*1	*1	*1		*1	1685	2.0	18-May-92	
TX	31	892	TX CRUISE 892	3	16	16	199	16	582	*1	*1	*1	*1	*1		*1	829	2.0	18-May-92	
TX	32	892	TX CRUISE 892	3	16	16	307	16	1826	*1	*1	*1	*1	*1		*1	2181	2.0	18-May-92	
TX	33	892	TX CRUISE 892	3	16	16	312	16	1421	*1	*1	*1	*1	*1		*1	1781	2.0	18-May-92	
TX	34	892	TX CRUISE 892	3	16	16	204	16	1112	*1	*1	*1	*1	*1		*1	1364	2.0	18-May-92	
TX	40	892	TX CRUISE 892	3	16	16	263	16	1462	*1	*1	*1	*1	*1		*1	1773	2.0	18-May-92	
US	4	179	SA-SEAMAP/BEAUFORT ECOSYSTEM	3	571	438	847	37	2176	*1	*1	*1					4069	2.0	05-Nov-92	
US	4	180	OREGON II SUMMER SEAMAP	3	244	237	4178	172	26040	140	4815	*1	21	63			35889	2.0	21-Oct-92	
US	4	183	SEAMAP ICHTHYOPLANKTON/PLUME	3	114	*1	*1	113	*1	*1	*1	*1	77	150		1855	4205	6437	2.02	02-Nov-92
US	4	184	SEAMAP SHRIMP/GROUND FISH	3	512	490	11997	229	66970	*1	*1	*1	6	39		117	80321	2.0	06-Oct-92	
US	49	892	SEAMAP ICHTHYOPLANKTON/THERMA	3	141	*1	*1	131	*1	*1	*1	*1	125	212			484	2.0	15-Dec-92	
TOTAL					2636	2073	40720	1736	177591	702	14939	6	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)

ATTACHMENT 5

SEAMAP 1990

DATA SOURCE	VESSEL	CRUISE	CRUISE REPORT TITLE	STATUS	INVENTOR	BIOLOGICAL STATION	SPECIES	ENVIRONMENTAL	GENERAL L/F	SHRIMP L/F STATION	L/F	MERISTICS STATION	ICHTHYOPLANKTON SAMPLE	SPECIES	L/F	TOTAL SEAMAP VERSION	DATE DBASED		
AL	23	901	SUMMER SHRIMP GROUND FISH	3	14	14	159	14	684	5	74	*1	*1	*1	*1	*1	964	2.0	26-Mar-92
AL	23	902	AL JULY SHRIMP-GROUND FISH	3	1	1	15	1	36	1	3	*1	*1	*1	*1	*1	58	2.0	26-Mar-92
AL	23	903	FALL KING MACKEREL/REDDRUM/PLA	3	10	*1	*1	10	*1	*1	*1	*1	10	10			30	2.0	26-Mar-92
AL	23	904	FALL SHRIMP GROUND FISH	3	13	13	203	9	775	*1	*1	*1	*1	*1	*1	*1	1013	2.0	26-Mar-92
FL	36	901	SPRING 1990 ICHTHYOPLANKTON	3	21	*1	*1	21	*1	*1	*1	*1	21	61			103	2.0	22-Jul-92
FL	36	902	FALL 1990 ICHTHYOPLANKTON	3	30	*1	*1	30	*1	*1	*1	*1	30	90			150	2.0	22-Jul-92
LA	35	901	LA SPRING SEAMAP	3	24	18	457	23	3581	15	128	*1	6	15			4261	2.0	28-Jul-92
LA	35	902	LA SUMMER SEAMAP	3	31	24	444	31	3151	15	171	*1	7	21			3888	2.0	28-Jul-92
LA	25	903	LA AREA SEAMAP CRUISE 903	3	21	21	142	21	1436	9	202	*1	21	42			1894	2.0	28-Jul-92
LA	35	904	LA FALL SEAMAP	3	31	24	381	25	2954	18	174	*1	7	20			3627	2.0	28-Jul-92
LA	25	905	LA FALL SEAMAP	3	21	21	125	21	833	7	121	*1	21	42			1191	2.0	28-Jul-92
LA	35	906	LA WINTER SEAMAP	3	25	21	554	24	5978	20	952	*1	4	12			7586	2.0	28-Jul-92
MS	17	901	SUMMER SHRIMP/GROUND FISH	3	44	40	1086	44	8868	10	395	*1	4	12			10499	2.0	01-Nov-91
MS	17	902	FALL ICHTHYOPLANKTON SURVEY	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	3	24	24	727	20	4470	*1	*1	*1	*1	*1	*1	*1	5265	2.0	01-Nov-91
SC	51	901	SPRING SEAMAP SURVEY SOUTH ATL	3	210	210	4529	208	15747	60	702	*1	*1	*1	*1	*1	21666	2.0	08-Jul-92
SC	51	902	SUMMER SEAMAP S. ATLANTIC 90	3	156	156	4552	156	14060	91	1432	*1	*1	*1	*1	*1	20603	2.0	08-Jul-92
SC	51	903	FALL SEAMAP SURVEY SOUTH ATL	3	182	182	6041	182	12663	128	2884	*1	*1	*1	*1	*1	22262	2.0	08-Jul-92
TX	31	901	SUMMER SHRIMP/GROUND FISH	3	16	16	128	16	456	9	69	*1	*1	*1	*1	*1	710	2.0	27-Mar-92
TX	32	901	SUMMER SHRIMP/GROUND FISH	3	16	16	267	16	1569	11	431	*1	*1	*1	*1	*1	2326	2.0	27-Mar-92
TX	33	901	SUMMER SHRIMP/GROUND FISH	3	16	16	289	16	1605	14	205	*1	*1	*1	*1	*1	2161	2.0	27-Mar-92
TX	34	901	SUMMER SHRIMP/GROUND FISH	3	16	16	125	16	606	5	101	*1	*1	*1	*1	*1	885	2.0	27-Mar-92
TX	40	901	SUMMER SHRIMP/GROUND FISH	3	16	16	120	16	786	7	218	*1	*1	*1	*1	*1	1179	2.0	27-Mar-92
TX	31	902	SHRIMP/GROUND FISH SURVEY	3	16	16	127	16	288	*1	*1	*1	*1	*1	*1	*1	463	2.0	30-Mar-92
TX	32	902	SHRIMP/GROUND FISH SURVEY	3	16	16	244	16	894	*1	*1	*1	*1	*1	*1	*1	1186	2.0	30-Mar-92
TX	33	902	SHRIMP/GROUND FISH SURVEY	3	16	16	146	16	497	*1	*1	*1	*1	*1	*1	*1	691	2.0	30-Mar-92
TX	34	902	SHRIMP/GROUND FISH SURVEY	3	16	16	99	16	496	*1	*1	*1	*1	*1	*1	*1	643	2.0	30-Mar-92
TX	40	902	SHRIMP/GROUND FISH SURVEY	3	16	16	197	16	872	*1	*1	*1	*1	*1	*1	*1	1117	2.0	30-Mar-92
US	4	187	SEAMAP ICHTHYOPLANKTON	3	151	*1	*1	139	*1	*1	*1	*1	139	408			698	2.0	07-Jan-92
US	4	189	SPRING SHRIMP/GROUND FISH	3	290	267	5620	230	34308	219	6083	*1	19	57			47074	2.0	27-Sep-91
US	4	190	PLANKTON SURVEY GULF OF MEXICO	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	3	293	290	6725	218	39457	*1	*1	*1	2	39	117		47102	2.0	23-Sep-91
US	28	901	SEAMAP ECOSYSTEM S ATLANTIC	3	136	80	70	62	*1	*1	*1	*1	40	*2	*2	*2	348	2.0	10-Jun-92
TOTAL					2128	1566	33572	1887	157070	644	14345	2	583	1340	32	91	212677		

STATUS CODES:

- *1 NOT TAKEN
- *2 NOT ENTERED
- 2 ENTERED IN P.C.
- 3 ENTERED ON MIAMI UNISYS A10 SYSTEM(VERIFIED AND DATA BASED)

ATTACHMENT 6

SEAMAP 1991

DATA SOURCE		VESSEL	CRUISE	CRUISE REPORT TITLE	STATUS	INVENTOR	BIOLOGICAL STATION	SPECIES	ENVIRONMENTAL	GENERAL L/F	SHRIMP L/F STATION	ICHTHYOPLANKTON			TOTAL SEAMAP	DATE DBASED				
												L/F	MERISTICS	STATION	SAMPLE	SPECIES	L/F	VERSION		
AL	23	911	SUMMER SHRIMP	GROUND FISH GOM	3	10	10	159	10	450	7	155	*1	*1	*1	*1	*1	801	2.0	26-Mar-92
AL	23	912	KING MACKEREL	RED DRUM PLANKTO	3	10	*1	*1	10	*1	*1	*1	*1	10	10			30	2.0	26-Mar-92
AL	23	913	GROUND FISH	SURVEY GOM	3	7	7	174	7	935	*1	*1	*1	*1	*1	*1	*1	1130	2.0	26-Mar-92
FL	36	911	SPRING 1991	ICHTHYOPLANKTON	3	13	*1	*1	13	*1	*1	*1	*1	13	39			65	2.0	22-Jul-92
FL	36	912	FALL 1991	ICHTHYOPLANKTON	3	23	*1	*1	23	*1	*1	*1	*1	23	68			114	2.0	22-Jul-92
LA	25	913	SUMMER SEAMAP		3	21	21	130	21	1479	6	62	*1	21	42			1782	2.02	30-Nov-92
LA	25	915	FALL SEAMAP		3	21	21	193	21	1716	12	230	*1	21	42			2256	2.02	30-Nov-92
LA	35	911	SPRING SEAMAP		3	29	22	602	29	6570	19	188	*1	7	21			7480	2.02	30-Nov-92
LA	35	912	SUMMER SEAMAP		3	31	24	360	31	3368	12	251	*1	7	21			4098	2.02	30-Nov-92
LA	35	914	FALL SEAMAP		3	31	24	461	30	3096	22	395	*1	7	21			4080	2.02	30-Nov-92
LA	35	916	WINTER SEAMAP		3	31	24	606	30	5814	24	779	*1	7	16			7324	2.02	01-Dec-92
MS	17	911	SHRIMP/GROUND FISH	SURVEY	3	41	39	856	38	6402	27	989	*1	2	6	88	248	8734	2.0	10-May-94
MS	17	912	FALL ICHTHYOPLANKTON	SUR GOM	3	118	*1	*1	118	*1	*1	*1	*1	101	107	35	132	510	2.0	19-May-94
MS	17	913	SEAMAP CRUISE MS 913		3	27	27	657	27	4652	*1	*1	*1	*1	*1	*1	*1	5390	2.0	26-Feb-92
PR	56	911	CARIBBEAN SURVEY		3	417	417	415	*1	*1	*1	*1	1741	*1	*1	*1	*1	2990	3.2	01-Jul-96
PR	57	912	CARIBBEAN SURVEY		3	102	102	89	*1	*1	*1	*1	341	*1	*1	*1	*1	634	3.2	24-Jun-96
SC	51	911	SPRING SOUTH ATLANTIC	SURVEY	3	210	210	6022	210	15930	108	1931	*1	*1	*1	*1	*1	24621	2.0	15-Apr-92
SC	51	912	SUMMER SOUTH ATLANTIC	SEAMAP SI	3	156	156	3979	156	12688	75	1155	*1	*1	*1	*1	*1	18365	2.0	05-May-92
SC	51	913	FALL SEAMAP SOUTH ATLANTIC		3	172	172	4732	172	12249	99	2061	*1	*1	*1	*1	*1	19657	2.0	12-May-92
TX	31	911	SUMMER SEAMAP		3	16	16	250	16	1354	10	76	*1	*1	*1	*1	*1	1738	2.0	28-Sep-92
TX	32	911	SUMMER SEAMAP		3	16	16	270	16	1406	13	156	*1	*1	*1	*1	*1	1893	2.0	28-Sep-92
TX	33	911	SUMMER SEAMAP		3	16	16	182	16	596	10	99	*1	*1	*1	*1	*1	935	2.0	28-Sep-92
TX	34	911	SUMMER SEAMAP		3	16	16	138	16	681	10	51	*1	*1	*1	*1	*1	928	2.0	28-Sep-92
TX	40	911	SUMMER SEAMAP		3	16	16	187	16	891	12	182	*1	*1	*1	*1	*1	1320	2.0	28-Sep-92
TX	31	912	FALL SEAMAP		3	16	16	154	16	639	*1	*1	*1	*1	*1	*1	*1	841	2.0	16-Oct-92
TX	32	912	FALL SEAMAP		3	16	16	236	16	1015	*1	*1	*1	*1	*1	*1	*1	1299	2.0	16-Oct-92
TX	33	912	FALL SEAMAP		3	16	16	112	16	352	*1	*1	*1	*1	*1	*1	*1	512	2.0	16-Oct-92
TX	34	912	FALL SEAMAP		3	16	16	148	16	563	*1	*1	*1	*1	*1	*1	*1	759	2.0	16-Oct-92
TX	40	912	FALL SEAMAP		3	16	16	137	16	545	*1	*1	*1	*1	*1	*1	*1	730	2.0	16-Oct-92
US	4	192	ATLANTIC SEAMAP		3	314	208	*1	107	*1	*1	*1	*1	*1	*1	*1	*1	629	2.0	30-Oct-91
US	4	194	SEAMAP GULF PLANKTON	SUR	3	159	*1	*1	139	*1	*1	*1	*1	159	442			740	2.0	15-Apr-92
US	4	195	SEAMAP SPRING GROUND FISH	SURVE	3	288	267	6546	223	40667	186	7976	*1	37	111			56264	2.0	12-Dec-91
US	4	197	FALL BOTTOM FISH	SURVEY	3	327	293	7389	241	42639	*1	*1	*1	40	120	1353	3335	55697	2.0	19-May-94
US	28	914	FALL SEAMAP ICHTHYOPLANKTON	SUR	3	166	*1	*1	138	*1	*1	*1	*1	96	286	1102	2487	4179	2.0	17-May-94
TOTAL						2884	2204	35164	1954	166697	652	16736		551	1352	2578	6202	238525		

STATUS CODES:

- *1 NOT TAKEN
- 2 ENTERED IN P.C.
- 3 ENTERED ON MIAMI UNISYS A10 SYSTEM(VERIFIED AND DATA BASED)

-24-

ATTACHMENT 7

SEAMAP 1992

DATA SOURCE	VESSEL	CRUISE	CRUISE REPORT TITLE	STATUS	INVENTOR STATION	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	920	REEFFISH TRAP/VIDEO	3	7	7	3	*1	*1	*1	*1	20	*1	*1	*1	37	3.0	28-Jan-94	
AL	23	921	SUMMER SEAMAP	3	16	16	332	16	2059	6	78	*1	*1	*1	*1	2523	2.1	08-Jan-93	
AL	23	922	FALL SEAMAP ICHTHYOPLANKTON	3	9	*1	*1	9	*1	*1	*1	*1	9	9	*1	27	2.1	08-Jan-93	
AL	23	923	FALL SEAMAP	3	8	8	193	8	1099	*1	*1	*1	*1	*1	*1	1316	2.1	08-Jan-93	
FL	26	921	SPRING ICHTHYOPLANKTON	3	21	*1	*1	21	*1	*1	*1	*1	21	57	837 1521	2457	2.02	18-May-94	
FL	26	922	FALL ICHTHYOPLANKTON	3	14	*1	*1	14	*1	*1	*1	*1	13	37	426 834	1325	2.02	20-Sep-95	
LA	35	921	SPRING SEAMAP	3	30	24	625	30	7061	24	233	*1	6	18		8045	3.0	16-Nov-93	
LA	35	922	SUMMER SEAMAP	3	31	24	373	31	4215	12	88	*1	7	21		4795	3.0	16-Nov-93	
LA	35	923	FALL SEAMAP	3	25	20	342	23	2551	19	315	*1	5	10		3305	3.0	16-Nov-93	
LA	35	924	WINTER SEAMAP	3	31	24	659	31	7812	23	674	*1	7	20		9274	3.0	16-Nov-93	
MS	17	921	SEAMAP TRAP/VIDEO SURVEY	3	16	16	13	16	48	*1	*1	48	*1	*1	*1	157	3.0	02-Mar-93	
MS	17	922	SUMMER SEAMAP	3	44	42	1093	38	8408	32	916	*1	2	6		10579	2.02	08-Mar-93	
MS	17	924	FALL GROUND FISH	3	15	15	335	15	2445	*1	*1	*1	*1	*1	*1	2825	3.0	08-Oct-93	
PR	56	921	CARIBBEAN SURVEY	3	600	600	734	*1	*1	*1	*1	2674	*1	*1	*1	4608	3.2	22-Jul-96	
PR	56	922	CARIBBEAN SURVEY	3	647	647	327	*1	*1	*1	*1	709	*1	*1	*1	2330	3.2	22-Jul-96	
PR	57	922	CARIBBEAN SURVEY	3	90	90	160	*1	*1	*1	*1	628	*1	*1	*1	968	3.2	03-Jul-96	
SC	51	921	SPRING SOUTH ATLANTIC SURVEY	3	210	210	5045	210	13967	95	1053	*1	*1	*1	*1	20790	2.02	29-Sep-92	
SC	51	922	SUMMER SOUTH ATLANTIC SURVEY	3	156	156	3801	156	8568	50	537	*1	*1	*1	*1	13424	2.02	30-Dec-92	
SC	51	923	FALL SEAMAP	3	188	188	4958	188	9692	89	1198	*1	*1	*1	*1	16501	2.02	27-Jan-93	
TX	31	921	SUMMER SEAMAP	3	16	16	168	16	827	12	159	*1	*1	*1	*1	1214	2.02	25-Mar-93	
TX	32	921	SUMMER SEAMAP	3	16	16	197	16	1043	7	34	*1	*1	*1	*1	1329	2.02	25-Mar-93	
TX	33	921	SUMMER SEAMAP	3	16	16	195	16	805	7	23	*1	*1	*1	*1	1078	2.02	26-Mar-93	
TX	34	921	SUMMER SEAMAP	3	16	16	158	16	769	12	90	*1	*1	*1	*1	1077	2.02	26-Mar-93	
TX	40	921	SUMMER SEAMAP	3	16	16	147	16	727	9	63	*1	*1	*1	*1	994	2.02	26-Mar-93	
TX	31	922	FALL SEAMAP	3	16	16	227	16	1141	*1	*1	*1	*1	*1	*1	1416	3.0	01-Jul-93	
TX	32	922	FALL SEAMAP	3	16	16	291	16	1655	*1	*1	*1	*1	*1	*1	1994	3.0	01-Jul-93	
TX	33	922	FALL SEAMAP	3	16	16	160	16	454	*1	*1	*1	*1	*1	*1	662	3.0	01-Jul-93	
TX	34	922	FALL SEAMAP	3	16	16	270	16	1442	*1	*1	*1	*1	*1	*1	1760	3.0	01-Jul-93	
TX	40	922	FALL SEAMAP	3	16	16	193	16	910	*1	*1	*1	*1	*1	*1	1151	3.0	01-Jul-93	
US	4	199	SPRING ICHTHYOPLANKTON	3	248	*1	*1	208	*1	*1	*1	*1	147	436		892	2.02	09-Mar-93	
US	4	200	SUMMER SEAMAP	3	284	260	6763	221	39987	174	3463	*1	41	123		51275	2.02	19-Jan-93	
US	4	201	FALL ICHTHYOPLANKTON	3	49	*1	*1	49	*1	*1	*1	*1	27	79	1046 2236	3459	3.0	24-May-94	
US	4	202	FALL BOTTOMFISH SURVEY	3	294	273	7061	220	43846	*1	*1	*1	6	30	90	378 732	52900	3.0	20-Sep-95
US	28	923	REEFISH CRUISE	3	179	147	113	149	*1	*1	*1	607	29	147		1342	3.0	14-Jul-93	
US	28	925	FALL ICHTHYOPLANKTON	3	118	*1	*1	116	*1	*1	*1	*1	73	219		453	3.0	02-Sep-93	
VI	58	922	VIRGIN ISL REEFFISH 1992	3	63	63	85	*1	*1	*1	*1	128	*1	*1	*1	339	3.1	19-May-95	
VI	59	922	VIRGIN ISL REEFFISH 1992	3	16	16	12	*1	*1	*1	*1	20	*1	*1	*1	64	3.1	19-May-95	
TOTAL					3569	3006	35033	1929	161531	571	8924	4840	417	1272	2687 5323	228685			

STATUS CODES:

*1 NOT TAKEN
 2 ENTERED IN P.C.
 3 ENTERED ON MIAMI UNISYS A10 SYSTEM(VERIFIED AND DATA BASED)

-25-

ATTACHMENT 8

SEAMAP 1993

DATA SOURCE	VESSEL	CRUISE	CRUISE REPORT TITLE	INVENTOR STATUS	BIOLOGICAL STATION	SPECIES	ENVIRONMENTAL	GENERAL L/F	SHRIMP L/F STATION	L/F	ICHTHYOPLANKTON MERISTICS STATION	SAMPLE	SPECIES	L/F	TOTAL SEAMAP VERSION	DATE DBASED	
AL	23	930	COMPARITIVE TOW	3	22	22	494	18	441	*1	*1	*1	*1	*1	997	3.0	19-Jan-94
AL	23	931	SUMMER SEAMAP	3	10	10	212	10	953	5	95	*1	*1	*1	1295	3.0	19-Jan-94
AL	23	932	FALL ICHTHYOPLANKTON	3	9	*1	*1	9	*1	*1	*1	9	9	*1	27	3.0	19-Jan-94
AL	23	933	FALL SEAMAP	3	9	9	199	9	1108	*1	*1	*1	*1	*1	1334	3.0	19-Jan-94
AL	23	934	REEFFISH TRAP/VIDEO	3	11	11	24	11	*1	*1	*1	343	*1	*1	400	3.0	06-Jul-94
FL	26	932	FALL ICHTHYOPLANKTON	3	36	*1	*1	36	*1	*1	*1	*1	36	108	180	3.0	15-Feb-94
FL	30	931	SPRING ICHTHYOPLANKTON	3	19	*1	*1	19	*1	*1	*1	*1	19	57	95	3.0	10-Nov-93
LA	35	931	SPRING SEAMAP	3	31	24	680	30	8117	20	189	*1	7	21	9112	3.0	08-Apr-94
LA	35	932	SUMMER SEAMAP	3	31	24	443	30	5597	22	535	*1	7	21	6703	3.0	08-Apr-94
LA	35	933	FALL SEAMAP	3	31	24	501	29	5012	19	414	*1	7	21	6051	3.0	18-Apr-94
LA	35	934	WINTER SEAMAP	3	29	24	619	29	7615	23	721	*1	5	15	9075	3.0	18-Apr-94
MS	17	930	SEAMAP COMPARATIVE TOW	3	22	22	551	*1	409	*1	*1	*1	*1	*1	1004	3.0	15-Oct-93
MS	17	931	TRAP/VIDEO	3	8	8	2	8	*1	*1	*1	4	*1	*1	30	3.0	08-Mar-94
MS	17	932	SUMMER SEAMAP	3	37	35	908	37	7420	29	832	*1	2	6	9304	3.0	08-Mar-94
MS	17	933	FALL ICHTHYOPLANKTON	3	48	*1	*1	48	*1	*1	*1	48	48	6	144	3.0	17-Jun-94
MS	17	934	FALL ICHTHYOPLANKTON	3	47	*1	*1	47	*1	*1	*1	47	53	6	147	3.0	05-Jul-94
MS	17	935	FALL SEAMAP	3	27	25	688	27	4713	*1	*1	*1	2	6	5486	3.0	07-Jun-94
PR	56	931	CARIBBEAN CRUISE	3	600	600	466	*1	*1	*1	*1	1297	*1	*1	2963	3.2	22-Jul-96
PR	56	932	CARIBBEAN CRUISE	3	563	563	468	*1	*1	*1	*1	1106	*1	*1	2700	3.2	24-Jul-96
PR	57	932	CARIBBEAN CRUISE	3	499	496	316	*1	*1	*1	*1	746	*1	*1	2057	3.2	05-Nov-96
PR	57	933	CARIBBEAN CRUISE	3	561	561	435	*1	*1	*1	*1	1013	*1	*1	2570	3.2	05-Nov-96
SC	51	931	SPRING SEAMAP	3	210	210	4267	210	8920	80	1080	*1	*1	*1	14977	3.0	03-Feb-94
SC	51	932	SUMMER SEAMAP	3	156	156	3680	156	8484	65	1604	*1	*1	*1	14301	3.0	28-Jan-94
SC	51	933	FALL SEAMAP	3	188	188	4471	188	8600	105	1868	*1	*1	*1	15608	3.0	28-Jan-94
TX	31	931	SUMMER SEAMAP	3	16	16	328	16	1807	14	106	*1	*1	*1	2303	3.0	24-Mar-94
TX	32	931	SUMMER SEAMAP	3	16	16	250	16	1414	10	37	*1	*1	*1	1759	3.0	30-Mar-94
TX	33	931	SUMMER SEAMAP	3	16	16	271	16	874	8	98	*1	*1	*1	1299	3.0	30-Mar-94
TX	34	931	SUMMER SEAMAP	3	16	16	110	16	513	2	14	*1	*1	*1	687	3.0	30-Mar-94
TX	40	931	SUMMER SEAMAP	3	16	16	213	16	1056	11	345	*1	*1	*1	1673	3.0	30-Mar-94
TX	31	932	FALL SEAMAP	3	16	16	215	16	882	*1	*1	*1	*1	*1	1145	3.0	01-Jul-94
TX	32	932	FALL SEAMAP	3	16	16	253	16	1040	*1	*1	*1	*1	*1	1341	3.0	01-Jul-94
TX	33	932	FALL SEAMAP	3	16	16	304	16	1057	*1	*1	*1	*1	*1	1409	3.0	01-Jul-94
TX	34	932	FALL SEAMAP	3	16	16	113	16	331	*1	*1	*1	*1	*1	492	3.0	01-Jul-94
TX	40	932	FALL SEAMAP	3	16	16	200	16	1189	*1	*1	*1	*1	*1	1437	3.0	01-Jul-94
US	4	203	MARINE MAMMAL/ICHTHYO	3	212	*1	*1	107	*1	*1	*1	116	425	744	3.0	16-Nov-93	
US	4	204	ICHTHYOPLANKTON MAMMALS	3	274	*1	*1	160	*1	*1	*1	121	367	4236	3.0	20-Sep-95	
US	4	205	SUMMER SEAMAP	3	298	277	6899	222	40984	178	5465	*1	41	122	54445	3.0	06-May-94
US	4	207	FALL ICHTHYOPLANKTON	3	11	*1	*1	11	*1	*1	*1	10	30	52	3.0	31-May-94	
US	4	208	FALL GROUND FISH	2	303	285	7624	245	46394	*1	*1	*1	36	108	54959	3.1	15-Jul-94
US	28	934	SPRING ICHTHYOPLANKTON	3	91	*1	*1	82	*1	*1	*1	82	235	3344	3.0	20-Sep-95	
US	28	935	REEFFISH ICHTHYOPLANKTON	3	213	185	89	180	*1	*1	*1	387	28	107	1161	3.0	16-Feb-94
US	28	936	FALL ICHTHYOPLANKTON	3	162	*1	*1	159	*1	*1	*1	72	216	537	3.0	04-May-94	
VI	58	931	VIRGIN ISL REEFFISH 1993	3	15	15	*1	*1	*1	*1	*1	*1	*1	*1	30	3.1	23-May-95
VI	59	932	VIRGIN ISL REEFFISH 1993	3	30	30	8	*1	*1	*1	*1	9	*1	*1	77	3.1	19-May-95
VI	60	932	REEFFISH SURVEY	3	24	24	43	*1	*1	*1	*1	92	*1	*1	183	3.1	10-Nov-94

TOTAL STATUS CODES 4997 3988 36344 2277 164930 591 13403 4997 695 1975 2363 4008 239873

*1 NOT TAKEN
 2 ENTERED IN P.C.
 3 ENTERED ON MIAMI UNISYS A10 SYSTEM(VERIFIED AND DATA BASED)

-26-

ATTACHMENT 9

SEAMAP 1994

DATA SOURCE		INVENTOR	BIOLOGICAL	ENVIRONMENTAL	GENERAL L/F	SHRIMP L/F	ICHTHYOPLANKTON			TOTAL	SEAMAP	DATE			
VESS	CRUISE	STATUS	STATION	SPECIES	STATION	L/F	STATION	SAMPLE	SPECIES	L/F	VERSION	DBASED			
AL	23 941	3	8	8	223	8	1570	5	202	*1	*1	*1	2024	3.1	08-Nov-94
AL	23 942	3	9	*1	*1	9	*1	*1	*1	*1	9	9	27	3.1	17-Jul-95
AL	23 943	3	8	8	159	8	1036	*1	*1	*1	*1	*1	1219	3.1	26-Jun-95
AL	23 944	3	11	11	25	11	*1	*1	*1	379	*1	*1	437	3.1	04-Aug-95
FL	36 941	3	5	*1	*1	5	*1	*1	*1	*1	5	15	25	3.1	19-Oct-94
FL	36 942	3	29	*1	*1	29	*1	*1	*1	*1	29	87	145	3.1	16-Feb-95
LA	35 940	3	49	49	1433	11	398	42	268	*1	*1	*1	2250	3.1	21-Sep-94
LA	35 941	3	31	24	697	31	9424	23	153	*1	7	19	10402	3.1	21-Sep-94
LA	35 942	3	31	24	539	31	6411	17	465	*1	7	21	7539	3.1	28-Apr-95
LA	35 943	3	31	24	588	31	5943	23	439	*1	7	21	7100	3.1	28-Apr-95
LA	35 944	3	24	20	465	24	4253	20	571	*1	4	10	5387	3.1	28-Apr-95
MS	17 940	3	49	49	1427	*1	496	*1	*1	*1	*1	*1	2021	3.0	21-Sep-94
MS	17 941	3	39	37	993	39	8131	28	923	*1	2	6	10196	3.1	17-May-95
MS	17 942	3	9	9	20	9	*1	*1	*1	99	*1	*1	146	3.1	07-Apr-95
MS	17 943	3	47	*1	*1	47	*1	*1	*1	*1	47	51	145	3.1	25-Jul-95
MS	17 944	3	2	*1	*1	2	*1	*1	*1	*1	2	6	10	3.1	25-Jul-95
MS	17 945	3	23	23	562	12	4204	*1	*1	*1	*1	*1	4824	3.1	07-Apr-95
PR	56 941	3	170	170	237	*1	*1	*1	*1	775	*1	*1	1352	3.2	03-Jul-96
PR	57 942	3	499	499	336	*1	*1	*1	*1	698	*1	*1	2032	3.2	05-Nov-96
PR	57 943	3	595	595	689	*1	*1	*1	*1	1843	*1	*1	3722	3.2	05-Nov-96
SC	51 941	3	210	210	4051	210	7228	52	454	*1	*1	*1	12415	3.1	21-Sep-94
SC	51 942	3	156	156	3360	156	7227	56	1109	*1	*1	*1	12220	3.1	13-Oct-94
SC	51 943	3	188	188	5319	188	11833	116	2903	*1	*1	*1	20735	3.1	16-Feb-95
TX	31 941	3	16	16	200	16	1278	6	70	*1	*1	*1	1602	3.1	21-Jun-95
TX	32 941	3	16	16	199	16	1124	8	34	*1	*1	*1	1413	3.1	21-Jun-95
TX	33 941	3	16	16	147	16	353	5	35	*1	*1	*1	588	3.1	21-Jun-95
TX	34 941	3	16	16	127	16	675	10	117	*1	*1	*1	977	3.1	21-Jun-95
TX	40 941	3	16	16	129	16	668	5	28	*1	*1	*1	878	3.1	21-Jun-95
TX	31 942	3	16	16	270	16	1519	*1	*1	*1	*1	*1	1837	3.1	21-Jun-95
TX	32 942	3	16	16	251	16	1456	*1	*1	*1	*1	*1	1755	3.1	21-Jun-95
TX	33 942	3	16	16	140	16	538	*1	*1	*1	*1	*1	726	3.1	21-Jun-95
TX	34 942	3	16	16	121	16	525	*1	*1	*1	*1	*1	694	3.1	21-Jun-95
TX	40 942	3	16	16	146	16	562	*1	*1	*1	*1	*1	756	3.1	21-Jun-95
US	4 209	3	217	*1	*1	155	*1	*1	*1	*1	122	505	877	3.1	12-Oct-94
US	4 210	3	273	246	6212	239	42521	193	5352	*1	42	125	55161	3.1	16-Feb-95
US	4 214	3	288	253	7781	251	51577	*1	*1	*1	48	144	60294	3.1	18-May-95
US	28 944	3	60	*1	*1	60	*1	*1	*1	*1	60	173	293	3.1	19-Oct-94
US	28 945	3	191	160	111	159	291	*1	*1	432	30	115	1459	3.1	23-Mar-95
US	28 946	3	121	*1	*1	88	*1	*1	*1	*1	88	264	473	3.1	22-Mar-95
VI	59 941	3	88	88	38	*1	*1	*1	*1	63	*1	*1	277	3.1	19-May-95
VI	60 941	3	34	34	62	*1	*1	*1	*1	167	*1	*1	297	3.1	09-Nov-94
TOTAL			3655	3045	37057	1973	171241	609	13123	4456	509	1571	236730		

STATUS CODES:

*1 NOT TAKEN
 2 ENTERED IN P.C.
 3 ENTERED ON MIAMI UNISYS A10 SYSTEM(VERIFIED AND DATA BASED)

-27-

ATTACHMENT 10

SEAMAP 1995

DATA SOURCE			INVENTOR	BIOLOGICAL STATION	SPECIES	ENVIRONMENTAL	GENERAL L/F	SHRIMP L/F STATION	L/F	MERISTICS	STATION	ICHTHYOPLANKTON SAMPLE	SPECIES	L/F	TOTAL	SEAMAP VERSION	DATE DBASED	
AL	23	950	TRAP/VIDEO	3	12	12	21	12	*1	*1	231	*1	*1	*1	288	3.2	16-Oct-96	
AL	23	951	SUMMER SEAMAP	3	10	10	205	10	1440	10	316	*1	*1	*1	2001	3.2	01-Aug-96	
AL	23	952	FALL ICHTHYOPLANKTON	3	9	*1	*1	9	*1	*1	*1	9	9		27	3.2	01-Aug-96	
AL	23	953	WINTER SEAMAP	3	6	6	127	6	942	*1	*1	*1	*1	*1	1087	3.2	01-Aug-96	
FL	26	951	SPRING ICHTHYOPLANKTON	3	15	*1	*1	15	*1	*1	*1	15	45		75	3.1	04-Aug-95	
FL	26	952	FALL ICHTHYOPLANKTON	3	25	*1	*1	25	*1	*1	*1	25	74		124	3.2	01-Mar-96	
LA	35	951	SPRING SEAMAP	3	31	24	534	31	5361	20	166	*1	7	21	6188	3.2	30-Jul-96	
LA	35	952	SUMMER SEAMAP	3	25	18	404	25	5024	15	352	*1	7	21	5884	3.2	30-Jul-96	
LA	35	953	FALL SEAMAP	3	31	24	385	31	3316	19	271	*1	7	21	4098	3.2	30-Jul-96	
MS	17	951	SUMMER SEAMAP	3	40	38	1126	40	9015	34	1051	*1	2	6	11350	3.2	23-May-96	
MS	17	952	FALL ICHTHYOPLANKTON	3	49	*1	*1	49	*1	*1	*1	49	64		162	3.2	07-Oct-96	
MS	17	953	TRAP/VIDEO	3	8	8	5	8	29	*1	*1	*1	*1		58	3.2	23-May-96	
MS	17	954	FALL SEAMAP	3	26	25	531	26	3103	*1	*1	*1	1	3	3714	3.2	23-May-96	
PR	57	952	CARIBBEAN SURVEY	3	350	350	308	*1	*1	*1	1127	*1	*1	*1	2135	3.1	09-Nov-96	
SC	51	951	SPRING SEAMAP	3	210	210	4696	210	10439	92	987	*1	*1	*1	16844	3.1	21-Jul-95	
SC	51	952	SUMMER SEAMAP	3	156	156	4075	156	11806	95	2053	*1	*1	*1	18497	3.2	01-Mar-96	
SC	51	953	FALL SEAMAP	3	188	188	4229	188	9885	99	2206	*1	*1	*1	16983	3.2	12-Mar-96	
TX	31	951	SUMMER SEAMAP	3	16	16	233	16	1184	6	55	*1	*1	*1	1526	3.2	30-Jul-96	
TX	32	951	SUMMER SEAMAP	3	16	16	372	16	2621	15	365	*1	*1	*1	3421	3.2	30-Jul-96	
TX	33	951	SUMMER SEAMAP	3	16	16	175	16	466	7	22	*1	*1	*1	718	3.2	30-Jul-96	
TX	34	951	SUMMER SEAMAP	3	16	16	149	16	507	8	11	*1	*1	*1	723	3.2	30-Jul-96	
TX	40	951	SUMMER SEAMAP	3	16	16	161	16	796	11	352	*1	*1	*1	1368	3.2	30-Jul-96	
TX	31	952	FALL SEAMAP	3	16	16	237	16	780	*1	*1	*1	*1	*1	1065	3.2	24-Jul-96	
TX	32	952	FALL SEAMAP	3	16	16	287	16	1581	*1	*1	*1	*1	*1	1916	3.2	24-Jul-96	
TX	33	952	FALL SEAMAP	3	16	16	206	16	943	*1	*1	*1	*1	*1	1197	3.2	24-Jul-96	
TX	34	952	FALL SEAMAP	3	16	16	182	16	758	*1	*1	*1	*1	*1	988	3.2	24-Jul-96	
TX	40	952	FALL SEAMAP	3	16	16	120	16	363	*1	*1	*1	*1	*1	531	3.2	24-Jul-96	
TX	31	953	TRAP/VIDEO	3	2	2	6	*1	41	*1	*1	*1	*1	*1	51	3.2	31-Dec-96	
US	4	216	SPRING ICHTHYOPLANKTON	3	309	*1	*1	266	*1	*1	*1	266	778		1353	3.2	16-Oct-96	
US	4	217	SUMMER SEAMAP	3	233	220	6353	203	45116	172	7538	*1	21	62	59897	3.2	20-Mar-96	
US	4	219	FALL SEAMAP	3	249	234	7114	208	46287	*1	*1	*1	23	64	54156	3.2	11-Apr-96	
US	28	954	REEF SURVEY	3	165	133	69	127	*1	*1	*1	191	31	59	744	3.2	26-Sep-96	
US	28	955	FALL ICHTHYOPLANKTON	3	110	*1	*1	107	*1	*1	*1	*1	110	285	502	3.2	31-May-96	
TOTAL					2419	1818	32310	1912	161803	603	15745	1549	573	1512		219671		

STATUS CODES:

- *1 NOT TAKEN
- 2 ENTERED IN P.C.
- 3 ENTERED ON MIAMI UNISYS A10 SYSTEM(VERIFIED AND DATA BASED)

-28-

ATTACHMENT 11

SEAMAP 1996

DATA SOURCE		INVENTOR	BIOLOGICAL	ENVIRONMENTAL	GENERAL L/F	SHRIMP L/F	ICHTHYOPLANKTON			TOTAL	SEAMAP	DATE						
VESSELS	CRUISE	STATUS	STATION	SPECIES	STATION	L/F	STATION	SAMPLE	SPECIES	L/F	VERSION	DBASED						
AL	23	961	SUMMER SEAMAP	3	10	10	278	10	1995	5	40	*1	*1	*1	*1	2348	3.3	29-Sep-97
AL	23	962	ICHTHYOPLANKTON	3	9	*1	*1	9	*1	*1	*1	*1	9	9	*1	27	3.3	29-Sep-97
AL	23	963	FALL SEAMAP	3	7	7	188	7	1396	*1	*1	*1	*1	*1	*1	1605	3.3	29-Sep-97
AL	23	964	TRAP/VIDEO	3	7	7	10	7	*1	*1	*1	165	*1	*1	*1	196	3.3	29-Sep-97
FL	26	961	SPRING ICHTHYOPLANKTON	3	18	*1	*1	18	*1	*1	*1	*1	18	54		90	3.2	29-Jan-97
FL	26	962	SUMMER PLANKTON	3	19	*1	*1	19	*1	*1	*1	*1	19	57		95	3.3	13-May-97
LA	35	960	WINTER SEAMAP	3	31	24	462	31	4915	23	426	*1	7	19		5931	3.2	19-Aug-96
LA	35	961	SUMMER SEAMAP	3	30	24	399	30	4339	12	360	*1	6	18		5212	3.2	27-Nov-96
LA	35	962	FALL SEAMAP	3	31	24	333	31	2972	13	70	*1	7	21		3495	3.2	27-Jan-97
LA	35	963	WINTER SEAMAP	3	31	24	617	31	6395	24	586	*1	7	20		7728	3.3	20-May-97
MS	17	961	SUMMER SEAMAP	3	40	38	925	40	7102	28	642	*1	2	6		8821	3.2	27-Nov-96
MS	17	962	ICHTHYOPLANKTON	3	46	*1	*1	46	*1	*1	*1	*1	46	53		145	3.3	05-May-97
MS	17	963	FALL SEAMAP	3	29	27	463	29	2460	*1	*1	*1	2	6		3014	3.3	05-May-97
SC	51	961	SPRING SEAMAP	3	210	210	2815	210	7502	37	219	*1	*1	*1	*1	11003	3.2	11-Jul-96
SC	51	962	SUMMER SEAMAP	3	156	156	4053	156	10559	102	2059	*1	*1	*1		17241	3.2	15-Jan-97
SC	51	963	FALL SEAMAP	3	188	188	6390	188	14853	149	4297	*1	*1	*1	*1	26253	3.2	29-Jan-97
TX	31	961	SUMMER SEAMAP	3	16	16	230	16	896	9	69	*1	*1	*1	*1	1252	3.3	30-Jun-97
TX	32	961	SUMMER SEAMAP	3	16	16	267	16	1423	14	74	*1	*1	*1	*1	1826	3.3	30-Jun-97
TX	33	961	SUMMER SEAMAP	3	16	16	152	16	489	6	16	*1	*1	*1	*1	711	3.3	30-Jun-97
TX	34	961	SUMMER SEAMAP	3	16	16	146	16	867	9	52	*1	*1	*1	*1	1122	3.3	30-Jun-97
TX	40	961	SUMMER SEAMAP	3	16	16	156	16	812	8	89	*1	*1	*1	*1	1113	3.3	30-Jun-97
TX	31	962	FALL SEAMAP	3	16	16	199	16	1133	*1	*1	*1	*1	*1	*1	1380	3.3	30-Jun-97
TX	32	962	FALL SEAMAP	3	16	16	285	16	1367	*1	*1	*1	*1	*1	*1	1700	3.3	30-Jun-97
TX	33	962	FALL SEAMAP	3	16	16	161	16	631	*1	*1	*1	*1	*1	*1	840	3.3	30-Jun-97
TX	34	962	FALL SEAMAP	3	16	16	162	16	562	*1	*1	*1	*1	*1	*1	772	3.3	02-Jul-97
TX	40	962	FALL SEAMAP	3	16	16	244	16	1477	*1	*1	*1	*1	*1	*1	1769	3.3	30-Jun-97
US	4	220	SPRING ICHTHYOPLANKTON	3	172	*1	*1	165	*1	*1	*1	*1	172	506		843	3.2	16-Oct-96
US	4	221	SUMMER GROUND FISH	3	255	236	6027	215	41026	173	4999	*1	22	66		52997	3.2	27-Nov-96
US	4	223	GEAR COMPARISON	3	63	63	1428	*1	2457	*1	*1	*1	*1	*1		4011	3.2	06-Jan-97
US	4	224	FALL SEAMAP	3	270	243	7454	221	50421	*1	*1	*1	43	129		58738	3.2	27-Jan-97
US	28	964	REEFFISH	3	255	254	71	251	1	*1	*1	225	*1	*1	*1	1057	3.3	22-Oct-97
US	28	965	FALL ICHTHYOPLANKTON	3	90	*1	*1	90	*1	*1	*1	*1	90	270		450	3.2	15-Jan-97
US	28	967	WINTER PLANKTON	3	73	*1	*1	71	*1	*1	*1	*1	73	238		382	3.3	05-May-97
TOTAL					2200	1695	33715	2035	168050	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)

ATTACHMENT 12
SEAMAP 1997

DATA SOURCE	VESSEI	CRUISE	INVENTOR STATUS	BIOLOGICAL		ENVIRONMENTAL	GENERAL L/F	SHRIMP L/F		ICHTHYOPLANKTON			TOTAL L/F	SEAMAP VERSION	DATE DBASED					
				STATION	SPECIES			STATION	L/F	STATION	SAMPLE	SPECIES								
AL	23	971	SUMMER SEAMAP	3	8	8	171	8	1316	6	118	*1	*1	*1	*1	1635	3.5	28-Jul-98		
AL	23	972	ICHTHYOPLANKTON	3	9	*1	*1	9	*1	*1	*1	*1	9	9	*1	*1	27	3.5	28-Jul-98	
AL	23	973	TRAP VIDEO	3	10	10	17	10	*1	*1	*1	76	*1	*1	*1	*1	123	3.5	10-Aug-98	
AL	23	974	FALL SEAMAP	3	8	8	139	8	751	*1	*1	*1	*1	*1	*1	*1	914	3.5	28-Jul-98	
FL	26	971	SPRING ICHTHYOPLANKTON	3	18	*1	*1	18	*1	*1	*1	*1	18	54	*1	*1	90	3.3	13-Jan-98	
LA	35	971	SPRING SEAMAP	3	31	24	509	31	7168	15	188	*1	7	21	*1	*1	7987	3.3	22-Oct-97	
LA	35	972	FALL SEAMAP	3	31	24	433	31	3378	22	488	*1	7	21	*1	*1	4428	3.3	03-Feb-98	
LA	35	973	FALL SEAMAP	3	31	24	570	31	5862	23	324	*1	7	21	*1	*1	6886	3.3	24-Feb-98	
MS	17	971	SUMMER SEAMAP	3	41	39	868	41	6150	32	822	*1	2	6	*1	*1	7999	3.3	25-Nov-97	
MS	17	972	ICHTHYOPLANKTON	3	46	*1	*1	46	*1	*1	*1	*1	46	58	*1	*1	150	3.5	27-Jul-98	
MS	17	973	FALL SEAMAP	3	31	28	577	31	3748	*1	*1	*1	2	6	*1	*1	4421	3.5	27-Jul-98	
SC	51	971	SPRING SEAMAP	3	210	210	4652	210	9942	108	1274	*1	*1	*1	*1	*1	16606	3.3	15-Sep-97	
SC	51	972	SUMMER SEAMAP	3	156	156	2688	154	6763	63	1477	*1	*1	*1	*1	*1	11457	3.3	28-Oct-97	
SC	51	973	FALL SEAMAP	3	188	188	3245	188	4155	89	1245	*1	*1	*1	*1	*1	9278	3.3	21-Jan-98	
TX	31	971	SUMMER SEAMAP	3	16	16	251	16	1229	13	57	*1	*1	*1	*1	*1	1598	3.3	24-Feb-98	
TX	32	971	SUMMER SEAMAP	3	16	16	267	16	1730	12	102	*1	*1	*1	*1	*1	2159	3.3	24-Feb-98	
TX	33	971	SUMMER SEAMAP	3	16	16	192	16	534	9	34	*1	*1	*1	*1	*1	817	3.3	24-Feb-98	
TX	34	971	SUMMER SEAMAP	3	16	16	112	16	507	5	24	*1	*1	*1	*1	*1	696	3.3	04-Mar-98	
TX	40	971	SUMMER SEAMAP	3	16	16	157	16	820	10	318	*1	*1	*1	*1	*1	1153	3.3	24-Feb-98	
TX	31	972	FALL SEAMAP	3	16	16	257	16	1022	*1	*1	*1	*1	*1	*1	*1	1327	3.3	16-Apr-98	
TX	32	972	FALL SEAMAP	3	16	16	302	16	1457	*1	*1	*1	*1	*1	*1	*1	1807	3.3	16-Apr-98	
TX	33	972	FALL SEAMAP	3	16	16	204	16	752	*1	*1	*1	*1	*1	*1	*1	1004	3.3	16-Apr-98	
TX	34	972	FALL SEAMAP	3	16	16	241	16	1066	*1	*1	*1	*1	*1	*1	*1	1355	3.3	16-Apr-98	
TX	40	972	FALL SEAMAP	3	16	16	180	16	699	*1	*1	*1	*1	*1	*1	*1	927	3.3	16-Apr-98	
US	4	225	SEAMAP ICHTHYOPLANKTON	3	205	*1	*1	188	*1	*1	*1	*1	187	559	*1	*1	952	3.3	13-Jan-98	
US	4	226	SUMMER SEAMAP	3	258	217	5950	215	40109	173	5366	*1	47	141	*1	*1	52429	3.3	04-Mar-98	
US	4	229	FALL SEAMAP	3	256	238	6576	214	42879	*1	*1	*1	21	57	*1	*1	50220	3.5	06-Aug-98	
US	28	974	REEFFISH	3	303	302	35	303	*1	*1	*1	152	*1	*1	*1	*1	1095	3.3	22-Oct-97	
US	28	975	SEAMAP ICHTHYOPLANKTON	3	123	*1	*1	94	*1	*1	*1	*1	123	335	*1	*1	552	3.3	13-Jan-98	
TOTAL					2088	1610	28266	1955	139770	554	11719	152	467	1279				187393		

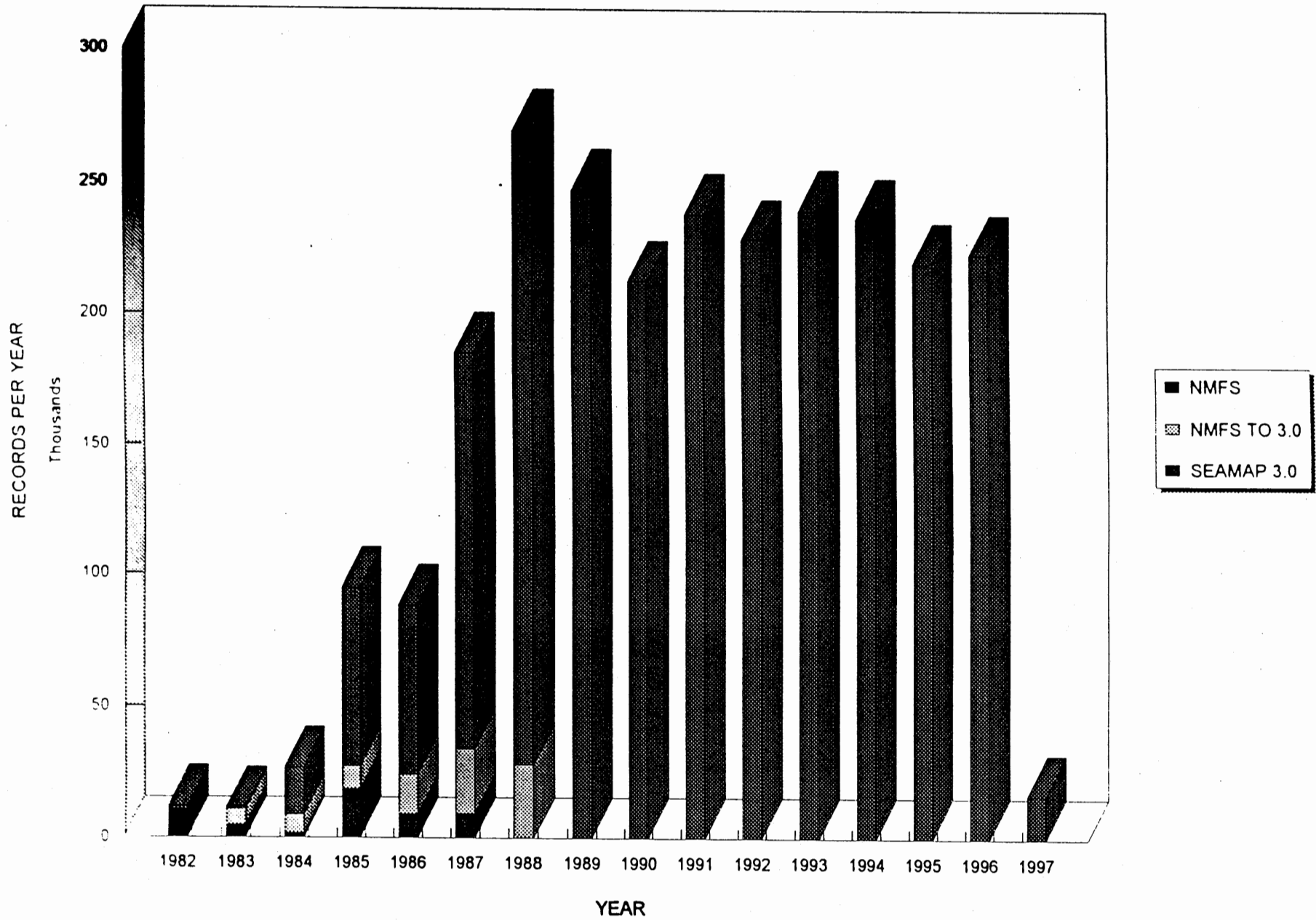
SEAMAP 1998

DATA SOURCE	VESSEI	CRUISE	INVENTOR STATUS	BIOLOGICAL		ENVIRONMENTAL	GENERAL L/F	SHRIMP L/F		ICHTHYOPLANKTON			TOTAL L/F	SEAMAP VERSION	DATE DBASED					
				STATION	SPECIES			STATION	L/F	STATION	SAMPLE	SPECIES								
LA	35	981	SPRING SEAMAP	3	31	24	410	31	5726	18	370	*1	7	18	*1	*1	6628	3.3	31-Aug-98	
SC	51	981	SPRING SEAMAP	3	210	210	4345	210	12781	117	1700	*1	*1	*1	*1	*1	19573	3.3	13-Aug-98	
SC	51	982	SUMMER SEAMAP	3	155	155	3809	155	10103	*1	*1	*1	*1	*1	*1	*1	14377	3.3	22-Sep-98	
TOTAL					396	389	8564	396	28610	135	2070		7	18				40578		

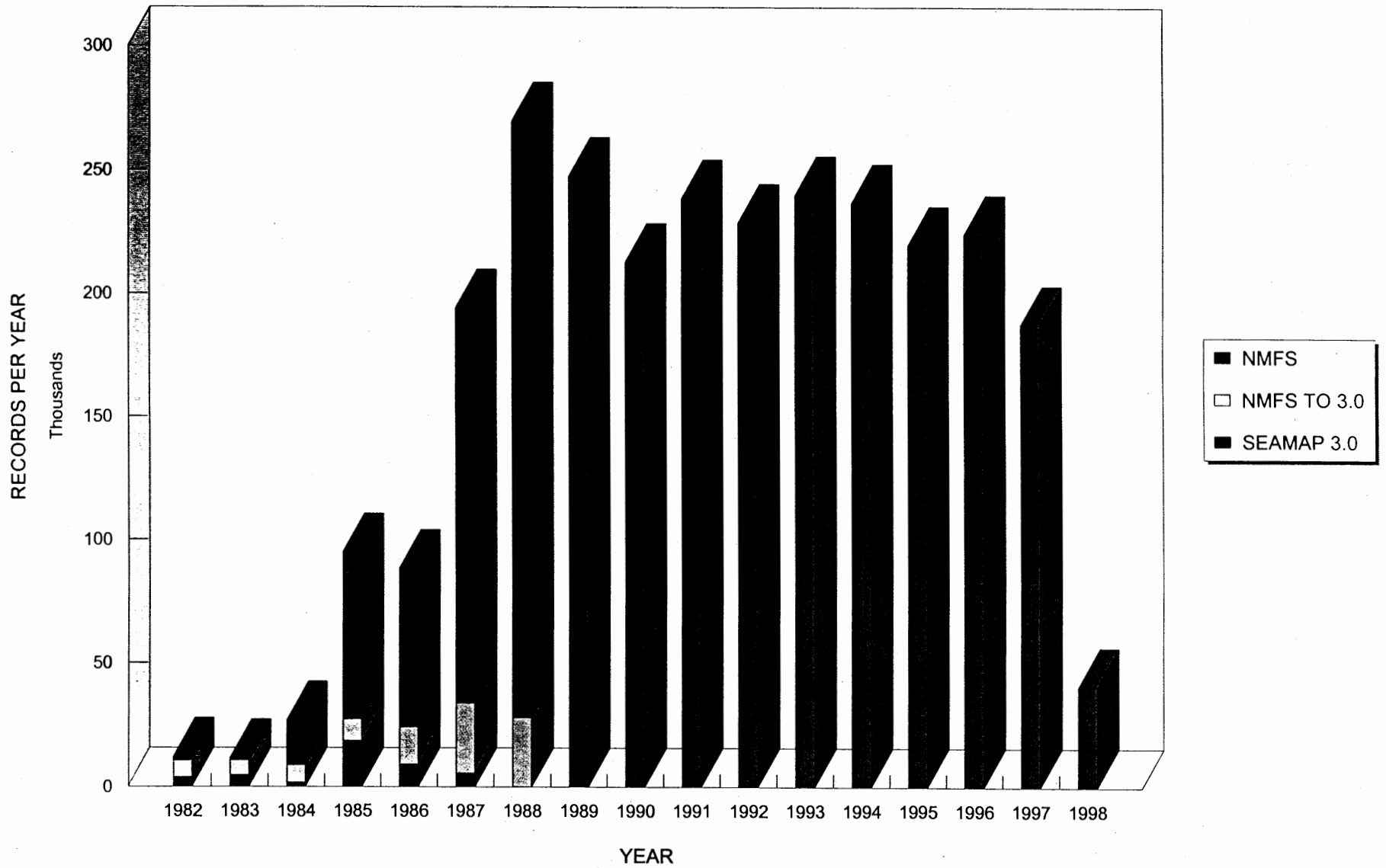
STATUS CODES

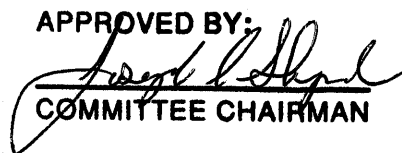
*1 NOT TAKEN
 2 ENTERED IN P.C.
 3 ENTERED ON MIAMI UNISYS A10 SYSTEM(VERIFIED AND DATA BASED)

SEAMAP TOTAL RECORDS



SEAMAP TOTAL RECORDS





 COMMITTEE CHAIRMAN

**DATA MANAGEMENT SUBCOMMITTEE
MINUTES**

**Tuesday, October 13, 1998
San Antonio, Texas**

Chairman S. Lazauski called the meeting to order at 8:35 a.m. The following members and others were present:

Members

Page Campbell, TPWD, Rockport, TX
 Joe Shepard, LDWF, Baton Rouge, LA
 Joe O'Hop, FMRI, St. Petersburg, FL
 Lee Green, TPWD, Rockport, TX
 Tom Van Devender, MDMR, Biloxi, MS
 Skip Lazauski, ADCNR, Gulf Shores, AL
 Rick Leard (*proxy for S. Atran*), GMFMC, Tampa, FL
 Charles Lavarini, (*proxy for J. Poffenberger*), NMFS, Miami, FL

Staff

David Donaldson, Data Program Manager, Ocean Springs, MS
 Larry Simpson, Executive Director, Ocean Springs, MS
 Ron Lukens, Assistant Director, Ocean Springs, MS
 Madeleine Travis, Staff Assistant, Ocean Springs, MS

Others

Terry Cody, TPWD, Rockport, TX
 Cynthia Sarthou, GRN, New Orleans, LA
 Glade Woods, MDMR, Biloxi, MS

Adoption of Agenda

The agenda was approved with the following modification: Add MMS Economic Survey and Update on Louisiana Trip Ticket Program items under RecFIN/ComFIN Issues.

Approval of Minutes

The minutes for the meeting held on March 17, 1998 in Destin, Florida, were approved as written.

State/Federal Reports

Alabama - S. Lazauski reported that Alabama has begun its third year of the inshore creel survey. There are two components of the survey which include on the water interviews and overflights. The survey activities appear to be going smoothly and is providing data for Alabama that has not been available in the past. Collection of finfish and shrimp general landings data and TIP data are continuing to be collected. Hurricane Georges caused some damage around the state. In Bayou La Batre, the damage was extensive and the fish houses will probably be out of commission for some time. Alabama is continuing to participate in the charter boat pilot survey. They have hired 2 additional staff who will be conducting the majority of the interviews.

Florida - J. O'Hop reported that FMRI staff is currently rewriting the editing software for the Florida trip ticket program. They are converting the software from dBase into Oracle. They are beginning to test the system. Testing should be completed by December. The conversion is designed to move the data base onto a new computer system, however, this will not include the licensing data base. Also, the trip ticket program is operating smoothly. There is about a 6 week lag between when the data have been collected and available in the data base. Florida is examining the possibility of developing a computerized reporting system for commercial data. He will keep the group informed on the status of this system. Florida is continuing to participate in the charter boat pilot survey being conducted in the Gulf of Mexico. Work seems to be going well. In addition, Florida has hired several new people (approximately 30) to conduct MRFSS intercept sampling for all modes during wave 6. Florida is working on developing some alternative methods for measuring fishing effort. All of the CSP positions have been filled and sampling is being conducted and appears to be going fine. Steve Brown is now working in the fisheries statistics division and Florida has hired Richard Cody to replace Tom Sminkey. There has been some minor problems with the year 2000 issue related to the trip ticket program and staff is working on resolving them.

Mississippi - T. Van Devender stated that the oyster season ended in mid-June and it has been a good harvest of oysters. After the season was closed, the Department conducted a survey of the reefs in Mississippi waters. It was noted that as the year progressed, the presence of oyster drills increased. Due to an algal bloom, there was to be a special season for oyster, however, Hurricane Georges hit the coast and the season was canceled. The Department is still assessing the biological impact of the hurricane. The eastern portion of the state saw the biggest impact. There was minimal effect on their new building (mainly leaks in the roof). The shrimp season opened in June and this should be an average year for shrimp harvest. The Department is working on a project that is mapping the state's wetlands using GIS. The Department is continuing its 15th year of work with the Cooperative Statistics Program and the 25th year of work for the IJF program. Wallop/Breaux money has continued to be used to fund a variety of projects regarding red drum, cobia, spotted seatrout, striped bass, as well as triple tail. Mississippi is in its tenth year of collection of recreational data via a creel survey. Mississippi is continuing to participate in the charter boat pilot survey being conducted in the Gulf of Mexico and work seems to be going well. In addition, Mississippi is gearing up to conduct MRFSS intercept sampling for all modes during wave 6.

Louisiana - J. Shepard stated that Louisiana is currently working with the dealers to design the trip tickets. There are currently 4 different types of tickets. Louisiana is conducting a survey to determine the percentage of dealers that utilize computers. So far, it appears that approximately 10% of dealers use computers in their business and they are generally the larger dealers. The dealer training workshops are going fairly well. These workshops will allow the dealers to have input into the design of the trip tickets, provide continued training and education of the dealers, and provide feedback on the various aspects of the program. The biggest complaint is that it takes too much time to complete the forms. The trip ticket pilot program was scheduled to begin in July but it appears that the pilot will be conducted in the November/December time frame. Louisiana is continuing to participate in the pilot charter boat survey. He noted that several of the captains are refusing to cooperate due to the recreational closure of the red snapper fishery. In addition, the number of answering machines being contacted has also increased. J. Shepard noted that the pre-validation aspects of the survey are quite costly in Louisiana and the group will continue to evaluate this aspect of the survey. Hurricane Georges caused minimal impacts to Louisiana and although there was some damage, it has yet to be evaluated. It appears that the oyster and shrimp seasons for this year should produce a good yield.

Texas - P. Campbell reported that Texas is continuing to examine the crab licensing issue and is continuing to conduct the shrimp license buy back program. Texas is continuing to sample for shrimp viruses in their bay system. They have expanded the sampling to include crabs as well as shrimp. Texas closed their waters

to the catch of red snapper in conjunction with the federal closure. Hal Osborn has been named the new director of the Coastal Fisheries Division. There have been several other personnel changes within the Austin office. Texas is currently converting their data base. They are utilizing a contractor to convert the data base. L. Green stated that Texas is currently testing script writers in the field. These units allow the samplers to enter the data into an electronic format, eliminating key entry. They are testing 24 units and should be done with the evaluation by early 1999. One of the problems with these units is that there is no hard copy of the data made during the interview and this could cause some problems. The hurricane season has had some impact on the Texas coast. Although there were no hurricanes, there were several tropical storms which dumped large amounts of rain on the state and has caused some problems in the fisheries. The impacts have not yet been determined.

GMFMC - R. Leard reported that the Council, in conjunction with the NMFS, develops an annual operations plan which outlines the needs for research, data analysis, etc. This task is usually completed mid-summer however, this year, the meeting is scheduled for the end of October. Although it is not possible to determine what will be addressed for next year, some of the issues the Council has been looking at includes examining alternative methods for setting TAC and ABC ranges, developing limited access strategies for the for-hire fisheries for king mackerel and the other reef fish complexes besides red snapper (red snapper has already been done), evaluate the pilot study regarding a vessel monitoring system in the fish trap fishery in south Florida and based on this evaluation, utilize the vessel monitoring system to collect additional catch and effort type data, begin gathering additional social and economic data to assess the effects on fishing communities. The Council will be hiring an additional technical staff person.

NMFS - C. Lavarini reported that Josh Bennett has replace Laura Bishop as the TIP manager. He distributed codes tables (gear, water bodies, etc.) for the Southeast Region to the group. He asked that the group review these tables and be prepared to discuss them at the upcoming ComFIN meeting. He asked if each state could compile a list regarding who needs permits (wholesale, retail, non-resident, etc.). This issue will be discussed at the next Data Management Subcommittee license. On the west coast, NMFS is conducting a logbook pilot project where data are being collected via transmitters on ships and captains are inputting their data via the web. This project is on-line and can be accessed through the web. If you are interested in the web address, you can contact J. Poffenberger. In the SEFSC, data entry is being completed by a contractor who uses OCR technology to enter the data. The turnaround time of the data has increased tremendously and the accuracy of the data has improved as well. One of the long-term goals is to make non-confidential commercial data available on the web and allow fishermen, dealers, and other interested parties to access the data, etc. New versions of the TIP program has been developed and will be distributed to the appropriate personnel. The NMFS is currently preparing a response to the VRS.

RecFIN/ComFIN Issues

Discussion of Fall ComFIN/RecFIN(SE) Meeting - D. Donaldson stated due to Hurricane Georges, the RecFIN(SE), FIN and ComFIN Committees has been rescheduled to meet from November 11-13, 1999 in Tampa, Florida. Since the meetings have not occurred, the group cannot discuss the identified issues.

Discussion of Charter Boat Pilot Survey - D. Donaldson stated that the Gulf States and the NMFS are continuing to participate in the charter boat pilot survey in the Gulf of Mexico. He stated that there is a wave meeting scheduled for October 20-22, 1998 to review the intercept data as well as the charter boat pilot data. Due to the transition funds, the charter boat pilot survey has been extended until December 31, 1998. Activities concerning the charter boat survey appear to being going well. D. Donaldson noted that during the transition period, the states and GSMFC will now have to meet several deadlines for submission of data.

He pointed this out to make everyone aware of this change and stated the importance of submitting the data in a timely manner.

Discussion of MMS Economic Survey - R. Lukens stated that Quantech has been awarded a MMS economic survey to collect information about fishing around oil rigs. However, since Quantech was not awarded the MRFSS contract for 1999, it will be difficult for them to complete the MMS survey. NMFS has offered to assist Quantech in completing the MMS survey and have asked the Gulf States to help conduct the survey. The states reviewed the questionnaire that has been developed for the survey. There was concern that there were too many questions as well as too much information being asked for by the respondent. Due to the length and detailed information requested, the states believe that conducting this survey, in its present form, will jeopardize getting the base MRFSS interviews. They do not want to conduct the survey in its present form. R. Lukens mentioned that they suggested some modifications (mainly reducing the number of questions asked) to the survey and ask NMFS if this was a possibility. The states agreed that if the number of questions were reduced (only 3 or 4 questions), they would be willing to help NMFS in conducting the survey. The Subcommittee directed R. Lukens to contact NMFS about the reduction of the questions and let the group know what has been decided.

Update on Louisiana Trip Ticket Program - J. Shepard provided an update about the Louisiana trip ticket program. The trip ticket program has been designed to collect trip level landings and define the sampling universe of commercial fishermen. From that, information about catch/effort, length frequencies, price and value, and other information can be collected. Louisiana has conducted dealer training workshops to allow the dealers to have input into the design of the trip tickets, provide continued training and education of the dealers, and provide feedback on the various aspects of the program. He reviewed the forms that have been developed. There are different types of trip tickets that can be used depending on what species were caught as well as the associated codes for the forms. The target for full implementation of the trip ticket program is January 1999.

Discussion of Data Management Subcommittee Schedule

D. Donaldson stated that since many of the issues that are discussed during the Data Management Subcommittee meeting are addressed during the RecFIN/ComFIN and MRFSS wave meetings, it was suggested that the Data Management Subcommittee does not need to meet. The group discussed the possibility of no longer have the Data Management Subcommittee meet and after some discussion, decided that although similar topics and issues are discussed in the other meetings, the Data Management Subcommittee forum provided an unique perspective on many of the identified issues. Therefore, the group wanted to continue meeting in conjunction with annual meetings of the GSMFC.

Election of Officers

After some discussion, S. Lazauski was reelected Chairman and J. Shepard was reelected Vice-Chairman.

There being no further business, the meeting was adjourned at 12:25 p.m.

**TCC HABITAT SUBCOMMITTEE
MINUTES
Tuesday, October 13, 1998
San Antonio, Texas**

The meeting was called to order at 1:00 p.m. The following members were in attendance:

Members

Frank Courtney, FDEP, St. Petersburg, FL
Steve Heath, ADCNR, Gulf Shores, AL
Dave Ruple, Nature Conservancy, Grand Bay, AL
Glenn Thomas, LDWF, Baton Rouge, LA
Paul Cook, LDWF, Baton Rouge, LA
Marc Foster, MDMR, Biloxi, MS
Bob Spain, TPWD, Austin, TX
Dale Shively, TPWD, Austin, TX
Bill Jackson, NMFS, Galveston, TX

Staff

Jeff Rester, Habitat Program Coordinator, Ocean Springs, MS
Cheryl Noble, Staff Assistant, Ocean Springs, MS
Larry Simpson, Executive Director, Ocean Springs, MS
Steve VanderKooy, IJF Coordinator, Ocean Springs, MS
Ron Lukens, Assistant Director, Ocean Springs, MS

Others

Cynthia Sarthou, Gulf Restoration Network, New Orleans, LA
Richard Waller, GCRL, Ocean Springs, MS
Bob Cooke, USFWS, Atlanta, GA
Glade Woods, MDMR, Biloxi, MS
Corky Perret, MDMR, Biloxi, MS

Adoption of Agenda

The agenda was adopted without changes.

Adoption of Minutes

The minutes were adopted without changes.

Election of Chairman

Dale Shively was unanimously elected as the new chairman.

Commission Fishery Management Plans and Essential Fish Habitat

J. Rester stated that amendments in 1996 to the Magnuson-Stevens Act required Federal Fishery Management Plans (FMPs) to be amended to include Essential Fish Habitat (EFH). This was only required for Federal FMPs. This did not include the Commission's FMPs. Steve VanderKooy stated that the Commission is currently revising the blue crab, spotted sea trout, and flounder FMPs. The habitat sections in these FMPs were updated and expanded but did not include EFH. These three FMPs started off with the same generic section describing the Gulf of Mexico and the estuaries in the Gulf of Mexico and then described the habitat specific to each managed species. Members were encouraged to review the three habitat sections and make recommendations to improve the sections.

Discussion ensued on whether the Commission FMPs should include EFH or just embrace the ideals of EFH but not use the term "essential fish habitat." The Subcommittee felt that the Commission FMPs should resemble those of the Gulf of Mexico Fishery Management Council (GMFMC) but the Commission should not duplicate the effort that went into describing and identifying EFH for the Council's FMPs. Therefore, the Subcommittee embraced the ideals of EFH, which include identifying and describing habitat essential to the managed species and generically listing potential threats to the habitat of the managed species, but did not feel that a duplication of work already preformed by the Council would be prudent.

The Subcommittee agreed that using the term essential fish habitat could cause confusion if the definition did not include everything listed in the Magnuson-Stevens Act. The Magnuson-Stevens Act states that Councils and the NMFS must identify and describe EFH, list potential threats to EFH, list conservation recommendations to conserve EFH, list future research needs, and also establish a consultation process with federal agencies to regulate activities that negatively impact EFH. The Subcommittee felt that the use of the term essential habitat would be more appropriate. It would embrace identifying and describing habitat and listing potential threats to habitats that are essential to the species managed by the species. The same definition as used in the Magnuson-Stevens Act could be used by the Commission but a paragraph should be included that described the differences between essential fish habitat and essential habitat.

Updating the 1990 Summary of Aquaculture Programs by State

The next items were the updating of the 1990 Summary of Aquaculture Programs by State and the formulation of a Commission policy on aquaculture and mariculture. Each member presented the changes to their respective state's aquaculture policy. Members also stated that the NMFS is also trying to update aquaculture policies throughout the country. Texas Sea Grant has also done some similar work recently. The GMFMC's policy on mariculture was reviewed. It was stated that the GMFMC's policy on mariculture has been recently updated. It was felt that the Commission's aquaculture policy should not differ dramatically from the GMFMC's policy. The updated version of the GMFMC's policy will be distributed to members along with any policy that the NMFS has in place. Each representative will review the policies and submit comments back to the Commission. These changes will be incorporated and a draft aquaculture policy will be presented at the March meeting.

The TCC also charged the Habitat Subcommittee with trying to incorporate marsh management into the Commission's aquaculture policy. Members felt that these might be two contrasting issues and that the incorporation could not be made. This will be explored in the future when the Commission's policy is more complete.

Other Business

The last item discussed was the creation of a new habitat poster or brochure. Members of the Subcommittee felt it was important to stress the importance of habitat to the sustainability of fisheries in the Gulf of Mexico. A poster would be a good way to stress this importance to the public. A poster was completed in 1996, but not many members were pleased with the results. B. Spain stated he would provide cost estimates for a poster that include the use of photographs. J. Rester stated he would explore sponsorship for the poster. **A motion was made to ask for approval from the TCC to seek funding to create a poster and/or brochure that stressed the importance of fish habitat.**

With there being no other business the Subcommittee adjourned at 3:30 p.m.

3/17/88

**TECHNICAL COORDINATING COMMITTEE
MINUTES
Wednesday, October 14, 1998
San Antonio, Texas**

Chairman C. 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
 Terry Cody, TPWD, Rockport, TX
 Jerry Mambretti, TPWD, Port Arthur, TX
 Tom McIlwain, NMFS, Pascagoula, MS
 Corky Perret, MDMR, Biloxi, MS
 John Roussel, LDWF, Baton Rouge, LA
 Tom Van Devender, MDMR, Biloxi, MS
 Skip Lazauski, ADCNR, Gulf Shores, AL
 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

Others

Glade Woods, MDMR, Biloxi, MS
 Mike Ray, TPWD, Austin, TX
 Bob Cooke, USFWS, Atlanta, GA
 Vince Guillory, LDWF, Bourg, LA
 Doug Vaughan, NMFS, Beaufort, NC
 Joe Smith, NMFS, Beaufort, NC
 Tom Heffernan, Rockport, TX
 Glenn Thomas, LDWF, Baton Rouge, LA
 Paul Cook, LDWF, New Iberia, LA
 Vernon Minton, AMRD, Gulf Shores, AL
 Chuck Wilson, LSU, Baton Rouge, LA
 Rick Leard, GMFMC, Tampa, FL
 Michael Bailey, NMFS, St. Petersburg, FL
 Pete Aparicio, GMFMC, Victoria, TX
 John Shepperd, Austin, TX

Adoption of Agenda

The agenda was approved with the addition of an update on the status of Commission Fishery Management Plans by S. VanderKooy.

Adoption of Minutes

The minutes for the meeting held on March 18, 1998 in Destin, Florida were approved with the following change. The following sentence from the Florida report was deleted, "Law enforcement would be separate and remain under the Department of Environmental Protection."

State/Federal Reports

Florida - A. Huff stated that the stock enhancement program in Florida is no longer stocking red drum in Biscayne Bay. He reported that Florida is using federal disaster money for scallop restoration. The Florida Marine Research Institute has 21 new career service positions. Florida now has the ability to share confidential information with other states as long as they abide by Florida's confidentiality regulations. A referendum is on the November voting ballot that will merge the Game and Freshwater Fish Commission with the Marine Fisheries Commission.

Alabama - S. Heath stated that Hurricane Georges left lots of debris in the Mississippi Sound area and for this reason, Alabama asked for and was granted a 30 day exemption from using TEDs in shrimp trawls. Work is currently being done to find disposal sites for shrimpers to use instead of throwing the debris back overboard. Oyster reefs in Alabama were hit hard by the hurricane. Alabama is currently building a new oyster reef on the west side of Mobile Bay. This reef will serve a dual purpose as an oyster reef and an artificial fishing reef. Alabama is also studying the effects of the hurricane on the different types of reef modules deployed off the coast. Red snapper season in Alabama state waters will remain open until the end of October.

Mississippi - T. Van Devender reported that the oyster season ended in June and that Mississippi has changed its sampling method on oyster reefs to square meters instead of square feet. Mississippi is also studying the effects of the hurricane on oyster reefs. There were no effects on oysters on the western end of Mississippi Sound. An accurate assessment of the effects on reefs in eastern Mississippi Sound has not been completed. Mississippi is also investigating a TED exemption because of the debris left by the hurricane. A brown tide bloom in Mississippi Sound closed oyster reefs during September, but the brown tide organism has no known toxic effects on humans. Oyster season in Mississippi waters opened on October 13, 1998. Mississippi is using Wallop-Breaux money to continue cobia tagging and also using red drum larvae to estimate spawning biomass. Mississippi is expanding some of their surveys to include information on night fishing and vessels leaving from private docks.

Louisiana - J. Shepard stated that three more oil platforms have been donated to Louisiana's artificial reef program since July. That brings the total to 74 oil platforms and 40 armored personnel carriers in the artificial reef program. The 1998 shrimp season has been above average. The blue crab season has been average but fishermen are reporting larger crabs than in previous years. The oyster season opened September 9, but there was a two week closure east of the Mississippi River after the hurricane. The new trip ticket program will be implemented January 1, 1999.

Texas - T. Cody stated that Hal Osburn is the new director of Coastal Fisheries at the Texas Parks and Wildlife Department. A crab license management plan went into effect September 1, 1998. The crab license costs \$500 in Texas and commercial crab licenses cannot be transferred until the year 2001. The fourth round of the shrimp license buyback program is completed. The first three rounds bought back 126 licenses and 53 were purchased in the fourth round. This included 29 bay licenses and 24 bait licenses. A red tide symposium was held in Port Aransas. The shrimp virus monitoring program is continuing. Texas waters

are closed to red snapper fishing and there have been reports of fish kills associated with storms in Texas' waters.

NMFS - T. McIlwain stated that the NMFS recently sponsored a shrimp virus workshop in New Orleans to develop best management practices. There is currently an outbreak of indigenous white spot disease in South Carolina aquaculture facilities. NMFS also has a new national aquaculture development plan. NMFS recently met with Mexico to develop joint programs for the management of sharks, shrimp, pelagics, and sea turtles. NMFS participated in a joint shark sampling cruise with Mexico and this cruise was able to sample Cuban waters. The NMFS has produced a red snapper stock assessment update along with stock assessments on vermillion snapper and all four mackerel groups in the Gulf and South Atlantic.

USFWS - D. Frugé stated that a \$150,000 grant was awarded by the Fish and Wildlife Service to study the effects of treating ballast water with peracetic acid to kill nonindigenous species in ballast water of ships. Organizational changes took place at the Fish and Wildlife Service in August that involve establishing separate program and geographic assistant regional director positions. Columbus Brown remains the Assistant Regional Director for Fisheries. The Panama City Fisheries Resource Office is continuing a study of Gulf sturgeon movements and habitat using radio and sonic telemetry in the Choctawhatchee River, Florida. They have also conducted a Gulf sturgeon population estimate in the Apalachicola River this past summer. Record numbers of Kemp's ridley sea turtles nested on the eastern coast of Mexico this year and St. Vincent National Wildlife Refuge also reported record numbers of sea turtle nestings.

IJF Status Report On FMPs

S. VanderKooy reported that the Blue Crab FMP is in its final stages of revision. Except for the economic section, every section is either in draft or its final stage. A mail and phone survey targeted commercial crabbers to compile information for the sociology section and a 25% response rate was recorded for the mail survey. The Blue Crab FMP should be completed by the spring of 1999. The Spotted Seatrout FMP should be completed in 1999. In 1998, a sociology section was completed, the stock assessment was nearly finished, and the economics section was completed. The Flounder FMP has been delayed due to the lack of a completed stock assessment. The FMP will be completed in 1999.

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

T. McIlwain stated that seven sets were made to sample for tagged fish between July 8 and August 11, 1998. Out of 7,315 fish sampled, 28 tags were found. The recapture phase has missed six weeks of sampling due to bad weather. The goal of the project was to recapture 20,000 fish from Alabama to the Louisiana/Texas state line. A report will be out in two to three months and an update will be given at the Spring GSMFC meeting.

The Use of Phosphogypsum as an Alternate Oyster Cultch

Dr. Charles Wilson reported on phosphogypsum aggregate as an alternate oyster cultch. Phosphogypsum is derived from the reaction of sulfuric acid and phosphate rock to produce fertilizer. Three hundred thirty

tons of phosphogypsum are produced each year. This magnitude of material would produce significant amounts of hard substrate that could be used as oyster cultch. He stated that bioaccumulation studies have shown that no negative side effects have been reported from the use of phosphogypsum in the marine environment. He wanted to ask the members of the TCC if they were interested in using phosphogypsum as oyster cultch and this would drive future research on the use of phosphogypsum. The TCC stated they would like to encourage continued research into the use of phosphogypsum and would like to be updated on any new findings.

Subcommittee Reports

Anadromous - D. Frugé stated he was again elected chairman. The Florida Department of Environmental Protection reported that a revised plan for promoting sturgeon aquaculture in the state is being developed. The revised plan will focus more attention on the conservation of wild stocks. They also reported that non native and hybrid sturgeon are being used more frequently in existing aquaculture programs. Louisiana is considering augmenting the gene pool of striped bass in Toledo Bend with fish from the East Coast. Mississippi has around 500 reports of striped bass caught in Mississippi coastal rivers and bays this year. Texas reported that drought conditions this year were not conducive to striped bass escaping their reservoirs and entering the coastal fishery. The TCC approved a motion by the Anadromous Subcommittee to respond by letter to the Fish and Wildlife Service that the Commission generally concurs with the Gulf Sturgeon Recovery Plan implementation report, with inclusion of editorial comments as discussed in the Subcommittee meeting.

Crab - V. Guillory stated that Harriet Perry was elected chairman of the Subcommittee and Vince Guillory was elected chairman of the Technical Task Force. The TCC approved a motion by the Crab Subcommittee to replace Steve Heath with Leslie Hartman on the crab TTF and the Crab Subcommittee. The TCC also approved a motion by the Crab Subcommittee to approve the preliminary budget of the blue crab mortality symposium in Lafayette with total expenses not to exceed \$9500.

SEAMAP - J. Rester stated Richard Waller was again elected chairman. A meeting with Henry Norris of the Florida Marine Research Institute will be held in December. The chairman and program coordinator of the Gulf, South Atlantic, and Caribbean will meet with Mr. Norris to discuss the feasibility of putting SEAMAP data on the Internet. This will make the data more available to users. The Subcommittee discussed the dissemination of red snapper real time data during the fall groundfish survey. Everyone felt that red snapper real time data should be distributed at the end of November after the fall groundfish survey is complete. This mailing will be distributed to fishery managers, the Council, anyone interested, and available via the Internet. It will contain the number of red snapper caught per hour at the different SEAMAP stations throughout the Gulf. The Subcommittee submitted a proposal to the Gulf and South Atlantic Fisheries Development Foundation to collect historical data sets containing juvenile red snapper abundances and distribution. This proposal also called for analyzation of these data sets to determine the optimal time to sample juvenile red snapper abundances to be used in stock assessments.

Data Management - S. Lazauski stated that he was elected chairman. The RecFIN/ComFIN meeting from September in Puerto Rico has been rescheduled for November in Tampa. The charterboat survey is going well in all of the states except that minor problems have arisen in Louisiana. Some fishermen are refusing to participate in the survey because of the red snapper closure. Louisiana also reported on their trip ticket program. Florida reported on their switch from a mainframe to an Oracle database. Alabama reported on their continuing creel survey and Texas is also undergoing a database conversion. Texas also reported on 24 scriptwriters that have been used in their surveys.

Artificial Reef - R. Lukens reported that the Artificial Reef Subcommittee met June 8-9, 1998 and finalized the draft language for the National Artificial Reef Plan. The Subcommittee is continuing work on the artificial reef database. There are currently 650 records in the database. The Subcommittee is drafting a discussion paper that discusses several issues regarding artificial reefs. Aggregation versus production with artificial reefs is still an issue but not as much as it used to be. The permitting of artificial reefs and who should hold artificial reef permits is still an issue. The Gulf Council has requested the Subcommittee update the Council on artificial reef activities.

Habitat - J. Rester stated that Dale Shively was elected chairman. The Subcommittee discussed the Commission's fishery management plans and the essential fish habitat guidelines. The Subcommittee felt it was important to have Commission FMPs resemble those of the Council. Although the Subcommittee embraced the ideals of EFH, they concluded that the term essential habitat will be used because of the connotations that go along with the use of the term essential fish habitat. The Subcommittee will also be formulating a Commission policy on aquaculture along with updating the 1990 Summary of Aquaculture Programs by State. The TCC approved a motion by the Subcommittee to gain the approval of the TCC to seek funding to create a poster and/or brochure that stressed the importance of fish habitat. The TCC would like more details on this at the next meeting.

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

**LAW ENFORCEMENT COMMITTEE
MINUTES
Wednesday, October 14, 1998
San Antonio, Texas**

Chairman J. Waller called the meeting to order at 8:30 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
 Jack King, TPWD, Austin, TX (*Proxy for Dennis Johnston*)
 Jeff Mayne, LDWF, Baton Rouge, LA
 Gene Proulx, NMFS, St. Petersburg, FL
 John Sherlock, USCG, New Orleans, LA

Others

Anne Alford, GMFMC, Tampa, FL
 John T. Jenkins, ADCNR/MRD, Dauphin Island, AL
 Donald W. Kraemer, USFDA, Washington, DC
 Michael S. Loy, USCG Fisheries Training Center, New Orleans, LA
 Rick Leard, GMFMC, Tampa, FL
 Dave McKinney, NMFS, Silver Spring, MD
 Vernon Minton, ADCNR/MRD, Gulf Shores, AL
 Karen Raine, NOAA GCEL/SE, St. Petersburg, FL

Staff

David Donaldson, Data Program Manager, Ocean Springs, MS
 Cindy Yocom, Staff Assistant, Ocean Springs, MS

Adoption of Agenda

By consensus, the LEC adopted the agenda as presented.

Adoption of Minutes

The minutes of the meeting held Wednesday, March 19, 1998, in Destin, Florida, were reviewed and approved as written.

FIN Law Enforcement Issues

David Donaldson, GSMFC FIN Program Manager, distributed the FIN Confidentiality Statement, ACCSP Law Enforcement Policy Statement, and a list of law enforcement issues developed by the ACCSP for the Committee to review. He explained that FIN is the fisheries information network and consists of two components, recreational and commercial. FIN's infrastructure throughout the southeast region includes the southeastern states, Caribbean, NMFS, FWS, NPS, Councils, and the Commissions. The objective of FIN

is to provide structure and guidance for the collection of commercial and recreational data in a coordinated state-federal cooperative manner. Data collection and management activities are being developed to provide the best-possible data. These data are very important and will be used for a variety management issues. In developing the universal data collection program, the group realized that the best-laid plans for collecting data could be made, but without law enforcement input, the potential for unenforceable reporting requirements will increase.

A similar program exists along the east coast (the ACCSP, Atlantic Coastal Cooperative Statistic Program). The ACCSP's Law Enforcement Committee developed a law enforcement policy statement which is succinct and stresses the importance of the law enforcement's role in the program. The FIN Committee feels that it is equally important to obtain input from the Gulf's law enforcement contingency. If it is the will of LEC, FIN invites their input and welcomes the development of a law enforcement policy statement.

The LEC thanked D. Donaldson for his presentation and agreed to work with the FIN Committee and program manager on law enforcement issues as related to the program. B. Buckson noted one sentence in the Confidentiality Policy Statement which reads, "Access to confidential data by State and Federal conservation and law enforcement personnel is authorized when the data are used only to corroborate or substantiate an investigation." J. Mayne noted the these documents are routinely used to begin investigations. J. King agreed that the statement implies a restrictiveness to the data. G. Proulx agreed that law enforcement should have access upon demand. The Committee had no hesitation in their problem with this statement and agreed to initiate action against restrictive access to the data. **J. Mayne moved that law enforcement personnel have total access to confidential fisheries data regardless if that information is used for corroboration or substantiation of an investigation. T. Bakker seconded the motion which passed by unanimous acclamation.** The Committee suggested alternative language such as, "Access to confidential data by state and federal conservation and management law enforcement personnel is authorized." D. Donaldson thanked the group for their enthusiasm and will be sending further background information for their review and comment. The LEC relayed their appreciation to D. Donaldson for the opportunity to be involved in the developing stage of the program.

Results of the Shellfish Patrol Assignment

Chairman Waller introduced Donald Kraemer, U.S. Food and Drug Administration, who presented a brief history on the development of criteria for patrol program evaluations and the results of the shellfish patrol assignment. There are four major program areas of the National Shellfish Sanitation Program that the FDA evaluates. These are growing area classification, processing plant sanitation, laboratory analysis, and closed area harvesting control (or patrol). Each area has objective standards to meet. The FDA evaluates those standards for compliance. The one exception is patrol standards. Some standards for patrol do exist; however, they are quite subjective. This results in rather subjective evaluations as well. In November 1995, the FDA began earnestly to develop more objective standards for patrol. Representatives from the FDA, NMFS, and USCG met to begin development of those standards. More recently, representatives from this group and its northeast counterpart were invited to provide input to the development process. The group began looking at a variety of different standards. The amount of illegal harvesting was reviewed. At one time, the program said no illegal harvesting was tolerated. Clearly, this is a standard that cannot be met. No matter how hard we work to deter it, illegal harvesting will never be zero. Zero tolerance was removed from the books six to eight years ago and was never replaced with an alternative standard. The amount of illegal harvesting is not an appropriate standard. The FDA then began to quantify numbers of patrol officers and equipment by acreage. This type of information was useful and interesting but setting a standard was not feasible because of the variety of ways patrols are being performed and variety of different kinds of

growing areas. The FDA determined that the standard for patrol should be the minimum frequency of patrol for all areas.

The FDA quickly determined that one frequency of patrol would not be meaningful for all areas. Classification of growing areas based on the risk for illegal harvesting began and several years have passed to refine that system. In FY1997, FDA field specialists were given an assignment to collect data from six growing areas in each of the shellfish producing states. This assignment tested the first system for classifying risk of illegal harvesting for growing areas. The data was disappointing for several reasons including the inconsistency in which FDA specialists performed the work, the states' receptiveness to the approach in collection of the data, and problems with the model.

At last year's ISSC Committee meeting a new assignment was discussed to recollect the data after refining the model. Significant and important changes were made to the model and an assignment was reissued in FY1998. Data was received from all 21 shellfish-producing states which have 126 growing areas. Twenty states (117 growing areas) have reported the frequency of patrol. There was a glitch in the assignment that I will take some of the responsibility but share it with some of the members from this group since all reviewed the assignment. The assignment did not include asking the obvious question, "how often are the areas patrolled?" Consequently, FDA did have to go back and ask that question. That is why some of that data is a little late coming in. We do, however, expect to get it from all 126 growing areas.

D. Kraemer distributed preliminary data from the assignment and noted that patrol frequency data from Texas had just come in and could not be included in time for this meeting. Florida data has not been received either. The data received is a dramatic improvement over the FY1997 data. In 1997, data was only available from 17 states. The data tables are set up by state and included substantive comments directly under that state's data. Information includes the species; growing area; size of the growing area; rating categories including the amount of shellfish, ease of harvest, and difficulty of patrol. With this data you can actually track what is affecting rating. A number of deductions can be taken including community policing, closure, specialized equipment, and weather conditions. The final score is included as low, medium, or high risk. Information is included on the current, reported patrol frequency by each state, whether the area is conditionally approved or prohibited, and information regarding equipment and number of patrol officers.

The frequency of patrol ranged from once every three months to daily. Nearly half of the areas reported a patrol of five to seven times per week. Only one area was patrolled less than once per month, and only eight areas were patrolled less than once per week. All states tended to gravitate to a daily patrol. The risk scores range from .5 to 4.5 with a maximum possible risk score of 5.2. Based on the 1997 data, growing areas at high risk should be patrolled 20 times per month, growing areas at medium risk should be patrolled 10 times per month, and growing areas at low risk should be patrolled once per month. Based on 1998 data, the standard's change. High risk area patrol frequency is 16 times per month, 8 times for medium, and 4 for low risk.

The FDA in conjunction with the ISSC has scheduled a meeting with representatives from the FDA, NMFS, and ISSC Patrol Subcommittee members to further review the data and prepare an issue based on the standardized patrol compliance criteria to be used by the FDA in evaluating state shellfish programs. This issue may be passed by the ISSC this year, and at that point it will become a standard for the program. The FDA has invited the entire LEC to participate; however, the FDA only has funding to defray travel costs for the Alabama and Mississippi representatives. J. King noted the time and effort that the group has expended in the development of this criteria and encouraged full participation by the LEC. **By consensus, the LEC will request travel costs from the GSMFC for the Texas, Louisiana, and Florida representatives to the**

attend the issue development meeting. The meeting will be held November 12-15, 1998 in Biloxi, Mississippi. The LEC thanked Mr. Kraemer for his update.

United States Coast Guard Report

J. Sherlock reported on the results of enforcement activities of the Eighth District from the period October 1, 1997 until September 30, 1998. This area includes from the Big Bend in Florida to the Texas-Mexico border and encompasses about $\frac{3}{4}$ of the Gulf of Mexico. Within this area are 15 search and rescue stations with 13 cutters, patrol boats, and 110' and 82' boats. Also, the district occasionally receives assistance from Atlantic's 210' cutters. Hours dedicated toward living marine resources enforcement include: 88 patrol days for cutters above 210', 494 patrol days for 82' and 100' cutters, and 7,500 hours for 41' (and below) utility boats. The Coast Guard and Auxiliary dedicated 2,300 hours in aircraft patrol. There were 2,858 commercial fishing vessel boardings. Of those, 894 vessels (31%) were cited for safety violations. There were 205 observed launches for Mexican shark boats inside Texas state or United States EEZ waters, 57 violations of non-U.S. masters operating commercial fishing vessels, and 125 undocumented aliens working aboard U.S. commercial fishing vessels. There were 27 TED and 14 BRD violations. The TEDs compliance rate for the year was observed at 99%. As an example, over 350 shrimping vessels were boarded, and no TEDs violations were found. The Magnuson-Steven's compliance rate was 98%, and the majority of violations were reef fish and shark. There were also 12 shrimping vessels caught operating in closed areas. The commercial fishing vessel safety regulations compliance rate was 69%. Several stations in the Eighth District received damage from Hurricane Georges. The Mobile station was flooded with 3' of water; the Gulfport station also flooded. Pensacola received minor damage; however, Pascagoula sustained heavy damages. As a result of Georges, five Coast Guard families in and around the Pascagoula area are homeless.

National Marine Fisheries Service Enforcement Report

E. Proulx reported that the new cooperative agreement with Florida has been in effect for three months. Louisiana has submitted papers to modify their cooperative agreement to include Lacey Act violations. The South Carolina joint project is in effect and five new officers are being funded. Georgia is in the first stages of developing a cooperative agreement. These cooperative agreements allow a continuous flow of funds to the states for enforcement.

The vessel monitoring program to track vessels used in fishing activities continues. Dozens of boats from the shrimp fleet cooperated in the program. It can give the position of the boat, indicate when a boat enters a closed area, and indicates when fishing gear is engaged. Depending upon how the system sensors and reporting alarms are configured, VMS can indicate a number of items regarding the operation of a boat. Basically, it can monitor a fishing fleet. Of note is the Atlantic Council's recent action to require vessel monitoring within the scallop fishery.

The Protected Resources Enforcement Team was fielded this spring. The team boarded over 300 vessels $\frac{1}{4}$ to 1 mile of the shore. Gear specialists from the Pascagoula Laboratory were onboard and provided assistance with fishermen's questions. A significant case involved one fisherman who had compromised his TED; two turtles were drowned as observed during the boarding. There were several reports from beach walkers who thought turtles were being mutilated by trawls; however, all turtles were sent to the laboratory and found to be a result of shark attacks.

Deputy cards are currently being printed and will be sent to Florida within a few weeks. The Brownsville office is being expanded. There are numerous problems with imports of illegal product and documentation problems including forged certificates of origin and repackaging of products. Four new officers have been

hired and two boats are active in Texas. NMFS is continuing its exchange of information with Louis Feyo MacDonald.

State Reports

Florida - B. Buckson reported that the Blue Crab TTF expects to complete the fishery management plan in early 1999. Major issues in the state include the gill net ban and conflicts between shrimp fishermen and stone crab fishermen. Florida's constitutional revision commission meets this year, and Florida also has a new governor. This may result in some agency reorganization.

Mississippi - T. Bakker reported that Hurricane Georges was disastrous to their office. A total of \$140,000 damage occurred of which \$97,000 was damage to their building. Agency personnel is up to 31, and the 16 week training course is in place. In a recent cocaine case, their officers worked with U.S. Customs and the local sheriff's office; a shrimp boat was seized. Homes, vehicles, and vessels were seized as a result of a gun running case. Approximately 18 people were apprehended in a \$450,000 case of stolen property including boats, motors, and jet skis. Proposed regulations include six inch, well-marked crab trap floats and allowing gill net fishermen possession of nets enroute to and from an open area as long as they remain in the channel.

Alabama - J. Waller reported the coast watch program was implemented; this program is proven as a good public relations and educational tool. Hopefully, it will also be a good enforcement tool. The jurisdictional line for commercial fishing and recreational netting has changed to below Interstate 10. Their agency has recommended closing some areas to snagging and cast nets.

Louisiana - J. Mayne reported that dealer workshops on the trip-ticket system are going well. Mullet season opens Monday at sunrise. Demand is down for American roe because the Asian market has farmed product. The U.S. Attorney's office has taken interest in a case where \$1.4 million pounds of mullet were not reported. Citations were given to 78 commercial fishermen, and Lacey Act cases are being investigated. There are 20 bills in the legislature; most of which are corrective legislation. The state has adopted shark regulations similar to the federal regulations. Hurricane Georges has practically wiped out Chandeleur Island. In order to make state regulations more enforceable within the EEZ, a venue change is proposed to extend enforcement authority to state regulations in federal waters provided there is no federal management plan in place. They want to make sure their district courts can also have this venue.

Texas - J. King, *proxy for D. Johnston*, reported that the state's crab management plan went into effect September 1, 1998. Limited entry is now being proposed for the shrimp fishery. He anticipates finfish will be next. A significant issue in Texas is that of Mexican national fishermen fishing in state waters with illegal gill nets and longlines. The impact on resources is becoming more and more noticeable. Over 90,000' of longline was recently found and pulled. Numerous species were entangled. Proposed measures to deal with the problem include making it illegal to possess illegal fishing gear in a vessel in state waters. A contraband seizure law would also allow them to seize the vessel.

NOAA Broadcast

J. Mayne reported that numerous requests are made from fishermen and Cooperative Extension Services to broadcast fishery closures. Requests of this sort are sent to the NMFS to broadcast on NOAA Weather Radio. These requests are determined on a case-by-case basis. The broadcast of fisheries information, especially closures, is essential in fisheries management and enforcement. **By consensus, the LEC requests the GSMFC research the possibility of a NOAA Fisheries Information Channel. This channel would**

be dedicated to the broadcast of public information on fisheries closures and other fisheries resource information for the Gulf. Further, the LEC requests the GSMFC begin an initiative for Congressional support.

Proposal to Extend Fisheries Jurisdiction Nine Miles

J. Mayne noted that recent legislation to extend fisheries jurisdiction out to nine miles was killed due to misinformation. The Callahan bill would have extended the fisheries jurisdiction in Alabama, Mississippi, and Louisiana out to nine miles. Florida and Texas already have jurisdiction out to nine miles. V. Minton noted that this fisheries management initiative was tangled with other issues including gas and oil mineral rights. The LEC remains in support of the extended jurisdiction and legislation to that effect. **J. Mayne moved to request the GSMFC recommend to Congress that fisheries jurisdiction lines in Alabama, Mississippi, and Louisiana be extended to nine miles. The motion passed by consensus.**

ISSC Patrol Committee and Executive Board Report

J. Waller noted that the Patrol Committee demonstrated the diversity of state patrol operations impacted by the Patrol Evaluation Pilot Project. Issues that were previously debated required discussion and clarification to inform new members the history of the project. FDA's representatives were commended for maintaining exceptional poise during five hours of intense and heated debate. The completion and adoption of standardized compliance criteria to be used by FDA in evaluating state shellfish patrol efforts will further the goal of the ISSC to protect public health to the fullest extent possible.

Law Summary Update

A draft of the 1998 *Law Summary* was distributed for review. Mississippi's portion of the document remains to be updated. G. Proulx noted that the *Law Summary* is a critical document in aiding enforcement activities.

Election of Chairman

T. Bakker moved to elect J. Waller Chairman. J. Mayne seconded the motion which passed by unanimous acclamation.

The meeting recessed at 1:45 p.m. to begin the Council's Law Enforcement Advisory Panel session. Chairman J. Waller reconvened the GSMFC LEC meeting at 4:30 p.m. One item remained undiscussed from the morning session.

Description of ASMFC LEC Applicability to GSMFC LEC

B. Buckson distributed a list of representatives of the ASMFC's LEC and explained the make-up of that committee. He noted that Gulf enforcement representatives are invited to meetings to provide input into their process. Attendance by the Gulf contingent is limited by the lack of travel funds. B. Buckson distributed the ASMFC LEC agenda for their upcoming annual meeting and noted the problem with measuring devices. These certified devices are necessary to make cases along the Northeast Coast. He stated that the ACCSP does indeed fit well with its counterpoint, the Gulf FIN Program. The Committee discussed ways in which to coordinate efforts. B. Buckson agreed to provide distributed materials from the ASMFC LEC meeting. The Committee suggested inviting the ASMFC LEC chairman to attend GSMFC LEC meetings.

There being no further business, the meeting adjourned at 4:45 p.m.

APPROVED BY:


COMMITTEE CHAIRMAN

**COMMERCIAL/RECREATIONAL FISHERIES ADVISORY PANEL
MINUTES
Wednesday, October 14, 1998
San Antonio, Texas**

P. Horn called the meeting to order at 8:45 a.m. with the following and others in attendance:

Members

Philip Horn, Clark Seafood, Pascagoula, MS
Bob Zales, II, Panama City, FL
Scott Riley, Tallahassee, FL
David Dexter, CCA, Mobile, AL
Bob Fairbank, Gulfport, MS
Randy Gros, Marrero, LA

Others

Michael Bailey, NMFS, Silver Spring, MD
Billy Fuls, TPWD, Rockport, TX
Page Campbell, TPWD, Rockport, TX
Maury Osborn, NMFS, Silver Spring, MD
Gary Reinitz, USFWS-Federal Aid, Arlington, VA
Tom Van Devender, MDMR, Biloxi, MS
Tom McIlwain, NMFS, Pascagoula, MS

Staff

Larry B. Simpson, Executive Director, Ocean Springs, MS
Ron Lukens, Assistant Director, Ocean Springs, MS
David Donaldson, Program Coordinator, Ocean Springs, MS
Steve VanderKooy, Program Coordinator, Ocean Springs, MS
Nancy Marcellus, Administrative Assistant, Ocean Springs, MS
Cheryl Noble, Staff Assistant, Ocean Springs, MS

Adoption of Agenda

R. Gros moved that the agenda be adopted; the motion passed unanimously.

Approval of Minutes

P. Horn moved to accept the minutes of the meeting held Wednesday, March 18, 1998, in Destin, Florida. R. Gros seconded the motion, and the minutes were accepted as written.

Introductions

P. Horn introduced the panels and audience.

P. Horn reported that the states have not always cooperated with the closures. The 1997 quota was based on a five fish limit which included the captain and crew; this year (1998) it was based on a four fish limit including the captain and crew. B. Zales indicated that the non-implementation of the 16-inch size limit was based upon the release mortality of undersized fish, not the speed at which the quota was reached. L. Simpson pointed out that this is not an easy fish to manage. P. Horn reported that the Stock Assessment Panel recommendations are for a 3-6 million pound TAC, but things are still up in the air between the NMFS, the Gulf of Mexico Fisheries Management Council, and Congress.

Two New BRD Designs

G. Faulkner was unable to attend the meeting due to illness and deferred discussion of the BRD designs until the next panel meeting in March 1999. S. VanderKooy handed out the information provided by G. Faulkner and suggested that the panel read the material at their convenience. G. Faulkner will have additional data and test results to present at the next meeting.

At this time, BRDs are required in all federal waters from Cape Sandblas, Florida, west to Brownsville, Texas, from state waters to the hundred fathom curve at all times. Although Florida may have recently, the other states have not yet implemented BRD requirements.

Status of the GSMFC Data Collection Program

M. Osborn gave a presentation to explain the Marine Recreational Fisheries Statistical Survey (MRFSS). The presentation included information on the background behind the MRFSS, the assumptions, the statistical design, the data analysis, the quality control mechanisms, and the utility of the data once it is compiled. M. Osborn pointed out that the key in getting people to understand the statistical nature of the program was through education about the program. A copy of Ms. Osborn's presentation is available through the Commission office.

R. Lukens followed up the presentation with an update on the intercept portion of the survey which is scheduled to be handled by the states through coordination by the GSMFC beginning January 1999.

Video - "A Call to Action: Illegal Shellfish Harvesting, Legal Intervention"

The Law Enforcement Committee has been involved for several years with the Interstate Shellfish Sanitation Conference (ISSC). The video viewed by the panel was a product of state-federal law enforcement cooperation and addresses the education of the lay public about the hazards of unregulated shellfish harvest, including law enforcement as well and human health. Recreational oyster harvesting is a popular activity. People who do not understand the risk of eating raw shellfish and the danger of eating polluted shellfish can be exposed to serious problems. Harvesting from closed reefs can pose major health problems and lead to the death of the consumer. The video highlights illegal harvest, illegal tagging, and prosecution of those who violate harvest guidelines.

Fishery Information Network (FIN) Issues

Fin Brochure - The latest version of the Fisheries Information Network (FIN) brochure was distributed to the panel to review and evaluate. The idea behind the brochure is to provide the general public with an explanation of the FIN program. D. Donaldson asked the panel for input regarding the usefulness of the brochure and any improvements that could be made to make it more understandable. The brochure will be

agencies implementing an exemption with decreased license fee may facilitate continued or increased participation in angling and perhaps additional tourism dollars to their state.

The panel suggested that this is only a regional issue. The exemption would lie with the Gulf States only; therefore, those non-residents that come to the coast from other areas annually would not be exempt. Each state bordering the Gulf of Mexico has the authority to initiate reciprocal licensing, although Mississippi and Texas' authority needs more clarification.

Although the panel did not have a quorum, the SOPs which had been established at the previous meeting were designed to ensure bipartisan equality on the panel. Since this issue was of interest to both commercial and recreational representatives, it was decided to suspend the rules and vote on the issue. **R. Gros moved to suspend the rules and accept a quorum of the joint Panel to take the necessary action. B. Fairbank seconded, and the motion carried without opposition.**

With the rules suspended, it was recommended that the panel put forth a formal recommendation to the S-FFMC. Considering that seniors are more and more being rewarded for years of hard work, this action should be deemed as yet another benefit to being a senior. The panel agreed to deal only with the reciprocal licensing issue and let the standardization of the exemptions among states get handled through the reciprocal agreements. **A motion was proposed by B. Fairbank that the Commercial Recreational Fishery Advisory Panel recommend that the Gulf States Marine Fisheries Commission support the establishment of reciprocal agreements for all states bordering the Gulf of Mexico, waiving the non-resident recreational saltwater fishing license fee for all Gulf residents under 16 years of age or 65 years of age and older. R. Gros seconded, and discussion followed.** For clarification, the issue of Louisiana residents being exempt at 60 will remain the same, this will only be standardized for non-resident licenses who are 65 or older. There may be some legal problems with exempting only Gulf States residents, and issue that may require further investigation. **Without any additional discussion, the motion passed unanimously.**

Other Business

Chairman P. Horn appointed R. Lukens to present the CRFAP report to the S-FFMC.

The next meeting is scheduled for March 1999 in New Orleans, Louisiana. It was suggested by the panel that a field trip would be appropriate, and R. Gros indicated he could make any necessary arrangements.

B. Zales asked about the SOPs established at the previous meeting regarding attendance. R. Lukens agreed to write a letter to the absent members regarding the attendance at the CRFAP meetings; however, Hurricane Georges has probably contributed greatly to the poor attendance at the meeting. It was suggested that perhaps proxies or alternates would be appropriate for the panel. Alternates could be appointed by the state directors, and it would be the absent members' responsibility to update and inform their own alternates. R. Lukens pointed out that there may be some conflicts with alternates because the panel was appointed by the state directors, but agreed to address the idea during the CRFAP report to the S-FFMC.

B. Fairbank moved to adjourn the Panel meeting, and R. Gros seconded. There being no further business, the meeting adjourned at 2:20 p.m.

- Whether data are collected through a census or a survey
- Degree of standardization between/among data sets and actions required to standardize (e.g. gear, sampling protocols, etc.)
- Any adjustments or manipulations of the data required to make the data applicable to stock assessment (e.g. gear selectivities, tuning indices, age/length keys, sex ratios, etc.)
- Any deficiencies in the data; including quantity, type, and geographic and temporal distribution
- Recommendations for improvement of data collection to facilitate conducting future stock assessments
- Metadata availability

Species List

spotted seatrout
sheepshead
Spanish mackerel
Gulf flounder
souther flounder
black drum
red drum
striped mullet
triggerfish
gray snapper

**S-FFMC MENHADEN ADVISORY COMMITTEE
MINUTES
Wednesday, October 14, 1998
San Antonio, Texas**

J. Smith, Chairman, called the meeting to order at 1:05 pm. A quorum was declared with the following members and others in attendance:

Members

Joe Smith, NMFS, Beaufort, NC
Barney White, Omega Protein, Inc., Houston, TX
Borden Wallace, Daybrook Fisheries, Inc., Empire, LA
Jerry Mambretti, TPWD, Port Arthur, TX
Vince Guillory, LDWF, Bourg, LA
Corky Perret, MDMR, Biloxi, MS

Others

Doug Vaughan, NMFS, Beaufort, NC
Joey Shepard, LDWF, Baton Rouge, LA
Richard Condrey, LSU, Baton Rouge, LA
Page Campbell, TPWD, Rockport, TX
Terry Cody, TPWD, Rockport, TX

Staff

Larry B. Simpson, Executive Director, Ocean Springs, MS
Jeff Rester, Habitat Coordinator, Ocean Springs, MS
Steve VanderKooy, IJF Coordinator, Ocean Springs, MS
Dave Donaldson, Data Coordinator, Ocean Springs, MS
Ron Lukens, Assistant Director, Ocean Springs, MS

Introductions and Opening Comments

J. Smith welcomed everyone and started the introductions. He noted the rather ambitious agenda before the Committee and appreciated the past year how members have all contributed to the tasks taken on by the Committee.

Membership Review

J. Smith noted the changes to the mailing list for the Committee. Add extension 101 to Borden Wallace's information, change the alternate for Joe Smith to Doug Vaughan, and drop John Barnes and Alex Chester since they are no longer in or associated with the menhaden business.

Adoption of Agenda

Chairman Smith suggested adding a presentation on the LA Trip Ticket System between item 4 and 5. **B. Wallace moved and V. Guillory seconded a motion to approve the agenda with those changes. Motion passed.**

Approval of Minutes

B. Wallace questioned why the Fishery Management Plan (FMP) revision noted on p. 49 had not been started. C. Perret suggested clarifying the language on page 49 under the *Pfiesteria* presentation to reflect that brown tides were not human disease concerns. **C. Perret moved and B. Wallace seconded a motion to approve the minutes with those changes. Motion carried.**

Louisiana Trip Ticket Presentation

J. Shepard presented the trip ticket program currently being presented to fishermen, dealers and processors around the state in workshops. All licensed dealers have been notified of the scheduled workshops location and times. A trip ticket system was established by statute in 1991, however it was not until 1998 that funding was provided. The system is scheduled to become active January 1, 1999. The LDWF personnel have developed four types of tickets with the industry for the required monthly submissions. Phone numbers for the forms are (225) 763-3588 and for assistance or questions at (225) 763-2373. The four types are for oysters, shellfish trips - single, shellfish trips - multiple and a generic ticket for finfish or any of the previous types. Menhaden will be required to utilize the generic ticket. Forms are sequentially numbered and the information received will be electronically scanned in. There can be no corrections made and the voided tickets with corrections must be sent in. Quantity for menhaden is in 1000's of standard fish, which the industry is currently using.

There was some discussion about Captain Daily Reports (CDR) use for trip tickets, since the information on the existing CDR is more detailed. The exception for menhaden since they already utilize CDR did not come out of the legislature as hoped.

Status of 1998 Fishing Season

J. Smith began by reporting that about two thirds of the Beaufort Lab as of Oct. 11 was transferred over to National Ocean Service (NOS). Three fisheries responsibilities remain, menhaden, reef fish, and endangered species.

As of the end of September, 440k metric tons of menhaden had been landed. This is down 14% from last year and 15% over the 5 year average. He noted that September was the worst month for landings in over 31 years. Some 50 vessels operated in 5 reduction plants in the Gulf and two or three bait boats landed menhaden for bait. The forecast was for an estimated catch of 609k metric tons and if the actual catch is normal for October and the actual catch reaches 500k metric tons that would be 18% down from the forecast.

Chairman Smith noted that all the CDR's since 1991 have been computerized for the Gulf. He looked over the data set and provided some salient points. Some 87% of the Gulf catch is off Louisiana. Average set time is 45 minutes and there are some 6,800 sets per year.

Update on Gulf Menhaden Stock Assessment

D. Vaughan provided a brief update on the stock assessment which he reported on in detail at the last meeting. He has added a new figure in response to last meeting's comments to clarify the presentation. Currently the paper is in review and will ultimately be sent to the *Technical Report Series* for publication. The stock assessment is a peer reviewed document done every few years for the fishery.

Industry Efforts in Bycatch Reduction

B. White made a presentation on the industry actions they have taken to address bycatch in their fishery. The industry had used Fairbanks Morris pumps when the most recent bycatch study was done by LSU. Since that time the industry has begun using Hydostall pumps which handle the fish in a more gentle fashion. This pump upgrade has cost roughly 100 thousand dollars. In addition the industry has spent some 60 thousand dollars on boat and hose cage modification in an in-house development mode to test how well they could exclude shark bycatch. In May of last year, they tested two new designs of hose cages for two weeks followed by two weeks with the old design as a control. A third design will be delayed until next season due to hurricane complications. Preliminary observations show good indications that a reduced number of sharks are being pumped through the system.

GSMFC Data Collection Program

L. Simpson reported that the menhaden port samplers, which are a part of the overall Commission data collection efforts in a State/Federal cooperative program, will continue next year. He noted the excellent working relationship between J. Smith of the Beaufort Lab and the Commission. This important long time series information is a critical component of the data needs not only by NMFS, the states, and scientists, but the industry as well. Efforts will continue to bring the agreement under one overall Commission cooperative agreement for data. This year, however, due to the critical nature of the timing of RecFIN work with the states, the menhaden port samplers will be a separate agreement.

Shark Bycatch in the Menhaden Fishery

Dr. R. Condrey of LSU reported on his work on shark bycatch which will be published soon. The work was done by Janaka DeSilva for his dissertation. The study was a three year project with voluntary participation of the menhaden industry and their vessels. Two or three observers were placed on vessel to obtain data in 1994-1996. Following up on R. Condrey's earlier observations, the study concentrated on the ecology of the sharks as they interacted with menhaden. Dr. Condrey reported that for 56 weeks in June and April the observers were taking data on 492 sets in the fishery. The observers sampled on some 50% of all the vessels in the fleet. He noted from the study that 70% of the sets had no sharks, 10% of the sets had only one shark, 5% of the sets had only two sharks, which indicates an inconsistent relationship between sharks and menhaden. He also noted however, one individual set took 148 sharks. For comparison, in 1994 the directed fishery for sharks took 191,000 sharks and the estimated bycatch for menhaden was 33,000 sharks.

The industry commented that some of the pictures taken and statements in the work seemed a little dramatic in their opinion.

FMP Revision Schedule

S. VanderKooy reported that the current three FMP's under way has hampered beginning the upcoming menhaden revision. He now expects to begin work on the menhaden FMP after the March meeting in 1999.

"All the Men Singing" Book Revision

John Frye is in the process of updating his last book on the history of the menhaden fishery. Several members of the Committee had been contacted along with the Commission staff for input. He expects to complete the update next year and is soliciting preprinting orders with a reduced rate of \$9.95 per copy for 100 or more. The Committee asked that the Commission consider purchase of 100 copies for distribution.

Election of Chairman

B. Wallace, the "Keeper of the List", reported that the next rotation for chairman is to be a state member of the Committee. V. Guillory of Louisiana was elected by unanimous acclamation to the office of chairman for 1999.

There being no other business the Committee adjourned at 4:50 pm.

APPROVED BY:


COMMITTEE CHAIRMAN

**STATE-FEDERAL FISHERIES MANAGEMENT COMMITTEE
MINUTES
Thursday, October 15, 1998
San Antonio, Texas**

Chairman L. Simpson called the meeting to order at 8:35 a.m. The following members and others were present:

Members

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

Staff

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

Others

Michael Bailey, NMFS, St. Petersburg, FL
Jeffrey Brown, NMFS, St. Petersburg, FL
Richard Condrey, LSU, Baton Rouge, LA
Paul Cook, LDWF, New Iberia, LA
Bob Cooke, USFWS, Atlanta, GA
Tom McIlwain, NMFS, Pascagoula, MS
Frederic Miller, Shreveport, LA
Bruce Morehead, NMFS, Silver Spring, MD
Pat Murray, CCA-Texas, Houston, TX
Mike Ray, TPWD, Austin, TX
Joe Smith, NMFS, Beaufort, NC
Glenn Thomas, LDWF, Baton Rouge, LA
Doug Vaughan, NMFS, Beaufort, NC
Tom VanDevender, MDMR, Biloxi, MS
Borden Wallace, Daybrook Fisheries, Empire, LA
Barney White, Omega Protein, Houston, TX

Adoption of Agenda

The agenda was adopted as amended.

Approval of Minutes

The minutes of the meeting held on March 19, 1998 in Destin, Florida were approved as presented.

Status of Emergency Appropriations (Bonnet Carre and red tide)

L. Simpson reviewed events that have taken place since 1997. In 1997 Congress approved an appropriation of \$3,500,000 to offset disasters in the Gulf of Mexico due to flooding and the red tide. The National Marine Fisheries Service (NMFS) requested that through the Gulf States Marine Fisheries Commission (GSMFC), the five state directors discuss potential projects and division of these funds. In October of 1997 this agreement was sent to Terry Garcia of the Department of Commerce. Recently, the Secretary of Commerce, while speaking in Pascagoula, Mississippi indicated that these funds had been released.

B. Morehead of NMFS reported that in August, 1998, Rollie Schmitt signed a determination of commercial fisheries failure (brown shrimp) due to the opening of the Bonnet Carre Spillway affecting the states of Louisiana and Mississippi (Attachment A). This was based in large part on the package sent to Mr. Garcia by the GSMFC. The amount of money allowed under the declaration is \$2,050,000 which is the amount documented as a loss due to commercial fisheries failure. Congress required NMFS to submit an implementation plan to the Chairmen of the House and Senate Appropriations Committees which was submitted at the end of August. NMFS has not yet had a response from either committee and until they do, disaster funds will not be released. However, an implementation plan for the remaining \$1,450,000 has been developed by NMFS under Section 402d of the Magnuson-Stevens Act (MSA), which allows the NMFS to contract with a commission, council, or state on a sole source basis to carry out information collection programs or any other purpose of the MSA. The red tide issue can be dealt with under this provision as can the money provided for the Bonnet Carre Spillway event. Morehead explained that the money allocated for flooding must be spent in Louisiana and Mississippi, but for red tide it can be spent in the five Gulf states. Morehead requested input from the Gulf states on how they would prefer to have the money distributed.

C. Perret noted that in January 1998 a letter from the GSMFC to A. Kemmerer included documentation of damages from red tide and Bonnet Carre Spillway events with a proposal for use of the funds when they became available. The five Gulf states agreed on the following division of funds: Texas - 13%, Louisiana - 37%, Mississippi - 14%, Alabama - 13%, Florida - 23%.

J. Roussel noted that there were two separate issues, i.e., releasing the money under MSA Section 312 or Section 402. Sec. 312 would release the funds under provisions of the MSA, Sec. 402 would split the money between the states. Sections 312 and 402 require matching funds of 25% from the states. After discussion it was agreed that a conference call with state directors will be arranged by GSMFC staff. Prior to this call participants are requested to consider two options: review the original agreement among the states which was reached at the meeting in New Orleans last year; and the \$2.05 million split between Louisiana and Mississippi dividing the remaining funds by applying the percentages agreed to at the New Orleans meeting.

J. Roussel noted that over the past year, three letters have been sent to NMFS concerning Bonnet Carre and the red tide and to date there has been no response. B. Morehead stated that there should be a response from the NMFS in approximately a week.

B. Morehead reported that official notification of the remaining funds from the Hurricane Andrew disaster will be forthcoming from the Southeast Regional Office of the NMFS and noted the possible leveraging of the remaining funds. Morehead distributed a handout entitled *Habitat Restoration Under Disaster Relief Funding* (Attachment B). The total amount of remaining funds is \$1,280,000. C. Perret questioned the

possibility of using these funds for law enforcement and Morehead will check. **E. Conklin moved that the balance of the Hurricane Andrew money will be divided using the split agreed upon for the original money. The motion was seconded and passed unanimously.**

Shark Bycatch in the Menhaden Fishery

R. Condrey reported on shark bycatch in the menhaden fishery and noted that the study was coordinated through the GSMFC Menhaden Advisory Committee (MAC) with the cooperation of the Gulf Coast Research Laboratory (GCRL), and the states of Mississippi and Texas. Funding was provided by the NMFS. This study was the result of a three year study conducted with the voluntary participation of the menhaden industry.

Condrey, using slides, explained the methods used for catching menhaden, transferring them to boats, the reduction process, and the different types of bycatch. The study took place in the Gulf of Mexico from the Mississippi coast to the Texas coast, with the majority of the catch coming from Louisiana. Sampling took place on board vessels during fifty-six week-long trips in 1994 and 1995. Fifty percent of the menhaden fleet was sampled using on-board observers. As a result of this study, a recommendation to the industry was made suggesting modifications to the hose cage so that it reduces the introduction of large fish thus reducing mortality and keeping the hose from becoming clogged.

Many species of shark are included in the bycatch, however black tip is the most common, with the most common length frequency being 100 - 149 centimeters. The total number of sharks in releasable bycatch in 1994 is estimated at almost 36,000 sharks, and in 1995 approximately 33,000 sharks. Condrey noted that a recent Stock Assessment workshop recommended the protection of juvenile black tip sharks from mortality in the recreational fishery. Condrey noted that the menhaden industry has taken proactive measures to attempt to reduce mortality, using his recommendation that they examine hose cages. Condrey also stated that he would contact V. Guillory of Louisiana Department of Wildlife and Fisheries (LDWF) to review studies that were conducted in the past. While industry is moving forward with the development of bycatch reduction devices, Condrey's group can serve as the scientific contact for their studies.

Menhaden Advisory Committee Report

J. Smith reported on the Menhaden Advisory Committee meeting. J. Shepard of the Louisiana Department of Wildlife and Fisheries (LDWF) was added to the agenda to discuss the new trip ticket system and how it will affect the menhaden industry. The trip ticket system will be implemented beginning in January 1999.

Smith reported on the status of the 1998 menhaden fishing season in the Gulf of Mexico. There were several events which impacted the fishery. In May the western end of the Gulf was affected by the forest fires in Mexico, since the haze and smoke created by the fires hampered fish spotting operations. August and September had five hurricanes in the Gulf. September landings were 35,000 metric tons, which was the worst September since 1967. So far the month of October has had good catches, and it appears the 1993 to 1997 average October landings of 52,000 metric tons will be reached this year. Including the through September landings of 440,000 metric tons, the total landings for this 1998 season should be 500,000 metric tons, which is down about 15% from the last five year average.

Smith gave a brief review of the captain's daily fishing reports which are referred to as deck logs. These reports from the fleet have been summarized in the form of a technical report due out this coming winter. In the Gulf approximately 87% of the catch is from off the coast of Louisiana with the remainder divided

between Mississippi and Texas, and a small portion from Alabama. Smith reported that D. Vaughan gave the updated Gulf menhaden stock assessment, which is done every five years along with the update of the Gulf menhaden fishery management plan (FMP). This information is going to Beaufort Laboratory inhouse review, then to NMFS technical report series.

B. White gave a report on the menhaden industry's efforts to reduce shark bycatch, and R. Condrey gave a report on shark bycatch in the menhaden fishery.

Smith reported that the Gulf menhaden FMP is due for update which is done approximately every five years. Since there are currently three FMP's under revision, the plan will be reviewed at the meeting next spring and should be completed by summer 1999.

There was a brief discussion on a book by John Frye on the menhaden fishery. This book, *The Men All Singing*, in it's second printing is due for release in February, 1999.

Vince Guillory was elected Chairman for 1999.

Industry Efforts at Bycatch Reduction

B. White presented a report on the menhaden industry's efforts to reduce bycatch with S. Branstetter being retained as an advisor and to critique the project. In addition to the obvious problem of bycatch, there are also problems with processing when bycatch is involved. In the past season \$60,000 was spent on the shark project, with additional money being spent upgrading the Daybrook and Omega Protein boats to use a new type of fish pump. The remainder of the fleet should be converted within the next two years. The new pumps are far more efficient and gentler on the fish. Another device which was evaluated were the hose cages. Newer designs were tested and compared with the old style cages. Three boat captains were involved in these evaluations. Because of the active hurricane season this year, evaluations were not complete. This project will be continued early next spring.

White noted that there probably is not one single answer to the shark bycatch issue. The solutions will probably lie in a combination of improvements, including better hose cages and fish pumps, responsible fishing practices where captains are instructed to release sets that have a high number of sharks, etc.

Status of IJF Fishery Management Plans

S. VanderKooy reviewed the status of the fishery management plans (FMP) under the Interjurisdictional Fisheries Management Program. The Blue Crab Management Plan is progressing rapidly and awaiting the completion of the economic section. The sociology section is being done by Impact Assessments, Inc. of LaJolla, California. A mail survey was completed and a summary of the data will be forthcoming. Currently a follow-up phone survey is underway and an executive summary of the sociology section is expected in December. A meeting is planned for January, 1999 for the final revision process.

The Seatrout FMP is progressing, three meetings having been held in 1998, once in conjunction with the Stock Assessment Team (SAT). The sociology and economic sections are complete, and the bulk of the stock assessment is complete. B. Muller has the data from Texas, Louisiana, Mississippi and Florida. The Alabama stock assessment is final draft stage. A meeting will be held in November, 1998 for the revision process, with completion anticipated for 1999.

The Flounder FMP sociology section is complete. The stock assessment has not been completed at this time, however the Texas stock assessment, which makes up the bulk of the western Gulf, has just been received.

VanderKooy noted that the menhaden plan should begin in June 1999 with a completion date in the end of 1999 or beginning of 2000.

The Stock Assessment Team met once in 1998 as noted above. Since the March meeting there has been no progress on the workshops. VanderKooy indicated to the SAT that a credited classroom situation belonged in a university setting and may not be appropriate for their needs. By January, 1999 the three stock assessments should be complete and the issue of workshops will be addressed.

R. Lukens noted that the Commercial Fisheries Information Network (ComFIN) will be getting responses to a Request For Proposals (RFP) to conduct an analysis of the databases. This analysis is targeted at documenting deficiencies in the databases to conduct stock assessments. This will identify areas that need attention in the next year's sampling efforts and will assist in making stock assessments more efficient.

FMP Compliance Report Card

S. VanderKooy reviewed the compliance matrix and a summary of the changes to the report card with members of the Committee. Minor changes and corrections were noted and will be made.

Finalization of State Directors December Meeting

The State Directors will meet at Lake Jackson, Texas on November 30, December 1 and 2, 1998. Included in activities will be a visit to a red drum hatchery, discussion of the disaster funds, and implementation of the MRFSS.

Commercial/Recreational Fishery Advisory Panel Report

R. Lukens reported that the advisory panel met with three recreational representatives and two commercial representatives present. There was no quorum. Some operating procedures were established. They voted to suspend the quorum rule since there were five members present of a ten member committee.

L. Simpson reported on the NOAA weather radio accessibility, since there are some dead areas in Louisiana. The National Weather Service responded, and Simpson will follow-up. The panel saw a video on BRD fisheye installation. The red snapper seasonal closures and quotas were also discussed. A video on illegal shellfish harvesting was also shown.

M. Osborn, NMFS program manager for the Marine Recreational Fisheries Statistics Survey (MRFSS) gave a presentation on how the survey works. This panel also serves as an advisory group to the Fisheries Information Network (FIN). Two items were presented to the panel. The FIN asked the panel for their endorsement of both the FIN brochure and the RFP for the data collection project. The panel endorsed both the brochure and the RFP.

Lukens reported that the panel recommends that the Commission support the establishment of reciprocal agreements for all states bordering the Gulf of Mexico waiving the non-resident recreational saltwater license fee for all Gulf residents under 16 years of age and all Gulf residents 65 years of age or older.

There was some concern by panel members on the low attendance at the meeting. The panel has requested that staff contact panel members not in attendance at the meeting to determine if they are still committed to attend. The panel also discussed the issue of designated proxies or alternates. The panel is requesting that state directors select alternates/proxies.

The issue of waiving non-resident recreational saltwater licenses was discussed at length.

C. Perret moved to go forward with the Commercial Recreational Advisory Panel's recommendation to have the S-FFMC recommend to the Commission that they support the reciprocal waiving of licenses for those individuals under 16 and those 65 and older. There was no second for the motion.

J. Roussel noted that Texas and Louisiana have such an agreement, but it is packaged together with other items such as shared water bodies. H. Osburn pointed out that Texas has endorsed the exemption concept but they have different age criteria and have introduced licenses for older individuals at a reduced fee in order to continue to monitor participation for Wallop-Breaux funding. Alabama does not have their licenses on computer file but expect up to 30% of their revenue to come from non-resident licenses. Alabama does have the authority to enter reciprocal agreements at this time. Florida could not pass this simply through an administrative action. B. Cooke, USFWS, addressed the issue of Wallop-Breaux funding. Wallop-Breaux Sport Fish Restoration funds are awarded to states based on license sales and a fee must be assessed. Most states are heading toward increased license revenue and/or a license requirement in order to track participation.

H. Osburn moved that the S-FFMC recommends the GSMFC support consideration of the establishment of reciprocal agreements for all states bordering the Gulf of Mexico, waiving or reducing the non-resident recreational saltwater license fee for all Gulf residents under 16 years of age or 65 years of age and older. The motion was seconded. After general discussion, J. Roussel offered a substitute motion to have staff research state regulations and provide options and other considerations and present this information at the state directors' meeting before bringing the issue to the Commission for action. The motion was seconded and passed unanimously.

J. Roussel moved to have staff notify the members of the Commercial/Recreational Fishery Advisory Panel of this action and request that panel members give their perspective and reasoning for bringing this issue to the S-FFMC. Panel members will be requested to respond prior to the December state directors' meeting. The motion was seconded and passed with C. Perret voting no.

Concerning the issue of appointing proxies for panel members, L. Simpson noted that three members from each panel were required to have a quorum. Several members were absent because of the recent hurricane, others because of illness and other unusual circumstances. After general discussion the Committee agreed to take no action at this time regarding the appointing of proxies to the Advisory Panel.

Agenda item #8 - Status of GSMFC Data Collection Program Report by D. Donaldson, Agenda item #9 - Habitat Program Report by J. Rester, and Agenda item #11 - Sport Fish Restoration Report by R. Lukens were not presented due to lack of time. They will be presented at the Commission Business Session.

Election of Chairman

L. Simpson was elected Chairman of the Committee.

Other Business

B. Cooke of the U.S. Fish and Wildlife Service briefed the Committee on Sport Fish Restoration funds. Cooke also note that Region 4 is hosting a workshop on large boat infrastructure to be held in Charleston on October 29 - 30. There was discussion concerning state involvement in the area of outreach and the development of a national plan. The states will also be asked to develop a state plan. Guidance will be forthcoming.

There being no further business, the meeting was adjourned at 12:00 noon.

**DETERMINATION OF A COMMERCIAL FISHERY FAILURE
AFFECTING THE STATES OF LOUISIANA AND MISSISSIPPI**

During the spring of 1997 and continuing into the fall 1997, the fishery resources of Louisiana and Mississippi suffered from the effects of the opening of the Bonnet Carre Spillway in Louisiana. The release of large amounts of freshwater from Bonnet Carre Spillway caused a severe loss of shrimp production in the Pontchartrain Basin and adjacent Mississippi coastal waters. The Gulf States Marine Fisheries Commission, in a letter dated October 10, 1997, requested a declaration of a fishery resource disaster for the Gulf of Mexico, pursuant to Section 312(a) of the Magnuson-Stevens Fishery Conservation and Management Act (Magnuson-Stevens Act), and requested financial assistance for its member states under authority of the Magnuson-Stevens Act to respond to the commercial fishery failure in Gulf of Mexico coastal waters.

Section 312(a) of the Magnuson-Stevens Act (16 U.S.C. 1861a) authorizes the Secretary of Commerce to exercise discretion in determining whether there is a commercial fishery failure due to a fishery resource disaster as a result of:

- (A) natural causes;
- (B) man-made causes beyond the control of fishery managers to mitigate through conservation and management measures; or
- (C) undetermined causes.

Determination of a fishery resource disaster

In 1997, Pontchartrain basin brown shrimp abundance significantly decreased. Shrimp landings for May through July 1997 were down nearly 80 percent from the nine-year average (1989-1996) for these months. Brown shrimp landings for June 1997 in Mississippi were 1,054,857 pounds. Compared with the eleven-year average (1986-1996) for this month of 4,203,465 pounds, this represents a decrease of 75 percent. Mississippi landings for all of 1997 were down approximately 700,000 pounds from the 1986-1996 annual average of 9,304,937 pounds.

Therefore, I find that a fishery resource disaster occurred that significantly reduced the number of commercially harvestable brown shrimp in Louisiana and Mississippi during 1997.

Determination of the cause of the fishery resource disaster

The Bonnet Carre Spillway release was caused by heavy rains in the Ohio River Valley resulting in the highest flood stages of the Mississippi River ever recorded for the month of March. The spillway was opened on March 17, 1997, in an effort to protect life and property from devastating floods in the vicinity of New Orleans, Louisiana. The spillway remained open until April 17, 1997, and during that time the maximum flow rate reached 240,000 cubic feet per

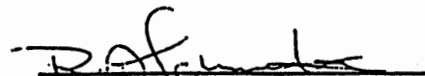
second. This large pulse of freshwater, diverted directly into Lake Pontchartrain, displaced or killed shrimp, as well as finfish, crabs, and other organisms in the Pontchartrain Basin. In addition to displacing or killing adults or subadults, the lower salinities and lower temperatures likely reduced the survival of larval fish and crustaceans recruiting to the impacted area.

Therefore, I find that the cause of the fishery resource disaster is due to natural conditions.

Determination of a commercial fishery failure

The Louisiana harvest of brown shrimp in the Pontchartrain Basin in 1997 resulted in landings that were only 20.85 percent of the nine-year annual average (1988-1996). The State of Louisiana reported that the average annual dollar value of this fishery was \$1,329,091 from 1988-1996, but the value of the catch in 1997 was only \$277,156. This represents a loss to the fishery in 1997 of \$1,051,935. The state of Mississippi reported that landings of brown shrimp experienced a similar drop after the spillway release when compared to the eleven-year annual average from 1986-1996. Mississippi brown shrimp landings for June 1997 were 1,054,857 pounds versus the eleven-year average for June of 4,203,465 pounds (a 75 percent decrease). For all of 1997, shrimp landings were down approximately 700,000 pounds, representing a loss of slightly more than \$1,000,000.

Therefore, I find that in 1997 the states of Louisiana and Mississippi suffered commercial fishery failures due to a fishery resource disaster as provided under Section 312(a) of the Magnuson- Stevens Act.



Rolland A. Schmitt
Assistant Administrator for Fisheries

8-7-98

Date

HABITAT RESTORATION UNDER DISASTER RELIEF FUNDING

Background. The NMFS Restoration Center is involved in three major activity areas to restore habitat for the enhancement of fishery productivity. These include:

The Damage Assessment and Restoration Program: NOAA, as a natural resource trustee, with other Federal and State Agencies, seeks to restore fish habitat and other natural resources that have been injured by the release of hazardous materials. Monetary damages or restoration is sought from responsible parties. We are currently working with the States of Florida, Louisiana and Texas on such cases.

The Community-based Restoration Program: NOAA develops partnerships with States, cities, local non-government organizations and private industry to combine financial resources and technical knowledge to restore local habitat sites. NOAA has developed these partnerships using base funding and various funding sources in combination with the American Sportfishing Association, the National Fish and Wildlife Foundation and other similar organizations

Activities under the Coastal Wetland Planning, Protection and Restoration Act: NOAA with other Federal agencies work with the State of Louisiana to develop and implement long-term watershed restoration plans to reverse wetland losses resulting from natural and human activities.

Objective. NMFS leadership has encouraged increased focus on habitat restoration, particularly partnerships with States and other major constituents. NMFS would like to work with the State fisheries agencies in the Gulf of Mexico to expand NMFS and State restoration efforts not only by the amount of restoration funds made available through Disaster Relief, but also by leveraging these funds with local funds, foundation funds, settlement funding under DARP and other sources to stretch the funding available and to increase the number of organizations and people involved in habitat restoration.

Some potential areas along the Gulf coast that could meet the objectives of enhancing our mutual habitat objectives that would also meet the requirements of the Federal Register notice issued in March, 1997 are attached.

Contacts. The NMFS Restoration Center would like to assist in any way to facilitate the development and implementation of Disaster Relief restoration projects. To discuss mutual objectives and potential projects for partnership please contact:

**Chris Doley, Community-based Restoration team leader or
James Burgess, Restoration Center Director at
NOAA Restoration Center
National Marine Fisheries Service, F/HC3
1315 East-West Highway
Silver Spring, MD 20910
Tel: (301)713-0174 Fax: (301)713-0184
E-mail: Chris.Doley@noaa.gov or James.Burgess@noaa.gov**

Gulf Coast Community-based Restoration Projects (Sample List)

Project Title	Description
<p>Florida Sea Base Restoration Partnership, Monroe County, FL</p>	<p>Partnership with the Florida Sea Base Program and the Florida State Park Service to support habitat restoration as part of the Boy Scouts of America's Seabase Program. Nearly ten thousand teenagers annually visit the base to participate in marine education activities. Funding would be used to support restoration of prop-scar damaged seagrass beds and the removal of exotic plants threatening mangrove habitat.</p>
<p>Middle / High School Wetland Nursery Program, Tampa Bay, FL</p>	<p>Partnership with the Tampa BayWatch and Southwest Florida Water Management District to restore saltmarsh habitat around the Tampa Bay region. The program works to establish salt marsh nurseries at middle and high schools to provide students with hands-on experience in habitat restoration activities while simultaneously supplying a free source of saltmarsh grasses and restoration volunteers for local restoration efforts including the Tampa Bay oil spill.</p>
<p>Priority Seagrass Restoration Program, Tampa Bay, FL</p>	<p>Partnership with the Florida Marine Research Institute and the Tampa BayWatch to restore seagrass in Tampa Bay. High school and college student volunteers will collect seagrass planting units from permitted donor sites and transplant the units to recovery areas. The transplanted seagrasses would augment (i.e. "jump start") the recovery of seagrass habitat in areas of the bay with appropriate water quality but lacking a viable seed source.</p>
<p>Great Bay Scallop Search, Tampa Bay FL</p>	<p>Partnership with the Tampa Baywatch and Tampa Bay NEP to mobilize community volunteers to monitor recovery of scallops back into the bay system. Could be coordinated with local scallop restoration efforts.</p>
<p>Upper Mobile Bay Restoration Project, AL</p>	<p>Partnership to restore both marsh and seagrass in the upper part of Mobile Bay. Project would be in partnership with the Dauphin Island Seabase and the Mobile Bay National Estuary Program. Water quality in the upper bay has improved sufficiently to support seagrass restoration. Numerous educational benefits.</p>
<p>Mississippi Shellfish Restoration</p>	<p>Partnership to develop or enhance local efforts to restore shellfish habitat benefiting shrimp, bluecrab and oyster populations.</p>

<p>Coastal Louisiana Seagrass Restoration</p>	<p>Partnership with the US Fish and Wildlife Service to restore seagrass in the Bayou Sauvage, Big Branch, and Breton National Wildlife Refuges.</p>
<p>Educational Marsh Creation at the University of New Orleans Research Park, LA</p>	<p>Partnership with the University of New Orleans to design, construct, plant, monitor and study a marsh restoration project on the south shore of Lake Pontchartrain. Project will demonstrate the feasibility of restoring wetlands within a highly urbanized setting. Numerous educational and research benefits.</p>
<p>Galveston Bay Marsh and Seagrass Restoration, TX</p>	<p>Partnership with the Galveston Bay Foundation, Galveston Bay NEP, and numerous local municipalities to restore saltmarsh and seagrass habitats. Specific restorations include: the bayside marshes and seagrass beds of Galveston Island; marshes of Goose Creek Greenbelt, Baytown; marshes of Dollar Bay and Moses Lake near Texas City.</p>
<p>Pierce Marsh Restoration Project, TX</p>	<p>Partnership with USFWS, Galveston Bay Foundation and State of Texas to construct intertidal brackish wetlands in open-water ponds within the Pierce Marsh Preserve. This marsh terracing project would be planted with both marsh plants and submerged aquatic vegetation. The project would augment on-going restoration activities funded under Natural Resource Damage Actions.</p>

3/18/99

**COMMISSION BUSINESS MEETING
MINUTES
Thursday, October 15, 1998
San Antonio, Texas**

Chairman Buster Brown called the meeting to order at 1:05 p.m. He welcomed the Commissioner's to San Antonio and introduced his staff member, John Shepard. Chairman Brown reported that the Commission building had received minor damage during Hurricane Georges and complimented the Commission staff for their efforts following the storm. 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*)
Hal Osburn, TPWD, Austin, TX (*proxy for Andrew Sansom*)
Mike Ray, TPWD, Austin, TX
L. Don Perkins, GSMFC, Houston, TX
J. E. "Buster" Brown, Texas Senate, Lake Jackson, TX
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

Others

Doug Frugé, USFWS, Ocean Springs, MS
Tom McIlwain, NMFS, Pascagoula, MS
Jerry Waller, ADCNR, Dauphin Island, AL
Richard Condrey, Coastal Fisheries Institute, LSU, Baton Rouge, LA
Barney White, Omega Protein, Houston, TX
W. Borden Wallace, Daybrook Fisheries, Inc., Empire, LA

Adoption of Agenda

The agenda was adopted as presented.

Approval of Minutes

Chairman Brown noted two corrections on page 4, paragraphs 7 and 8 (TCC Blue Crab Subcommittee). Instead of "proposed legislation", it should read "proposed rule". **C. Perret moved to approve the minutes of the March 16, 1998 meeting as corrected. V. Minton seconded. The motion passed.**

GSMFC Standing Committee Reports

Law Enforcement Committee (LEC) - J. Waller, Chairman for the LEC reported that the LEC met Wednesday, October 14, 1998. He reported that the LEC had reviewed the language in the FIN Confidentiality Policy Statement at the request of Dave Donaldson. The LEC had concerns regarding law enforcement personnel access to confidential data when the data are used only to corroborate or substantiate an investigation. They recommended that the language be changed to give law enforcement personnel total access regardless of whether or not the information is used in an investigation. There was a great deal of discussion regarding this issue. L. Simpson stated that law enforcement does have access to corroborate or substantiate an investigation and asked J. Waller if the data would be used for a stand alone case. J. Waller stated that the data would not be used to make a case. H. Osburn stated that the language as it existed gave law enforcement the access they needed, additional language could make other groups uncomfortable. D. Donaldson stated that further discussion with the LEC was necessary, and J. Waller agreed to continue discussion with D. Donaldson regarding the FIN Confidentiality Policy. He withdrew his recommendation at this time although he stated that the LEC remains concerned over law enforcement personnel access to confidential data.

Other topics discussed at the LEC meeting included continued efforts of the FDA and ISSC to seek input from the law enforcement community in regards to the completion of the Patrol Evaluation Criteria. A meeting is scheduled for November 12-15, 1998 in Biloxi, Mississippi for members of the FDA, NMFS, and ISSC Patrol Subcommittee. The LEC has been invited to attend, but need funding for the LEC's Texas, Louisiana and Florida representative. On behalf of the LEC, J. Waller respectfully requested funds be made available for those representatives to participate at this meeting.

Additional requests from the LEC included the GSMFC researching the possibility of a NOAA Fisheries Information Channel that would be dedicated to broadcasting public information on fisheries closures and other fisheries resource information for the Gulf. They further requested that GSMFC begin an initiative to seek Congressional support for this project.

The LEC continues to support legislation that would extend State fisheries jurisdiction out nine miles in Alabama, Mississippi, and Louisiana. Although this legislation (Callahan Bill) was recently defeated, the LEC requests the GSMFC recommend to Congress that fisheries jurisdiction lines in Alabama, Mississippi and Louisiana be extended to nine miles. C. Perret stated that he supported state rights but felt additional jurisdiction should also include additional funds, particularly for enforcement personnel. F. Miller felt that if the State's jurisdiction was extended it should be phased in. V. Minton did not think it would impact Alabama.

C. Perret motioned to accept the LEC report and recommendations as discussed, with the following modifications: regarding the GSMFC support of legislation that would extend State fisheries jurisdiction, no action will be taken until further investigation. V. Minton seconded. The motion passed.

Technical Coordinating Committee (TCC) Report - C. Perret reported that the TCC met on Wednesday, October 14, 1998. 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 approved a motion by the Anadromous Fish Subcommittee to respond by letter to the USFWS, that the Commission concurs with the Gulf Sturgeon Recovery Plan implementation report. Other committee action included the TCC approval of a preliminary budget, not to exceed \$9,500 for a blue crab mortality symposium in Lafayette, LA.; and, approval of a Habitat Subcommittee request to seek funding to create a poster/brochure that stresses the importance of fish habitat. The TCC requested additional details regarding the poster/brochure at the next meeting.

Other topics discussed at the TCC meeting included an update on the NMFS's red drum recapture phase of the tag and recapture project by Dr. Tom McIlwain. J. Roussel updated the TCC on the status of freshwater introduction projects. Dr. Chuck Wilson gave a presentation on phosphogypsum aggregate as an alternative oyster cultch. The TCC encourages continued research in the use of phosphogypsum and looks forward to updates on any new findings.

V. Minton motioned to approve the report as presented. E. Conklin seconded. The motion passed.

State-Federal Fisheries Management Committee (S-FFMC) Report - L. Simpson stated that the S-FFMC met just previously to this session. He described the make-up of the Committee. A major topic of discussion was the Emergency Disaster Appropriations that were a result of the flooding created by the opening of the Bonné Carre and a Gulf-wide red tied outbreak. He reviewed the events of the last two years in regards to these appropriations. He reported that B. Morehead, NMFS, updated the S-FFMC on the current status of the disaster appropriations. It appears to be nearing completion although some complications still exist. The appropriations will be distributed under two different sections of the Magnuson-Stevens Act. The states will once again need to re-group to coordinate final distribution of the disaster appropriations. B. Morehead also notified the S-FFMC that disaster funds remaining from Hurricane Andrews are now available to the states for distribution. The total amount left in the appropriations is \$1,280,000.

Other topics addressed in the S-FFMC included the status of IJF FMPs and a review of the FMP compliance report card; the upcoming State Directors winter meeting; a report from the Menhaden Advisory Committee; and, a report from the Commercial/Recreational Fishery Advisory Panel. This group is a newly formed committee. Among topics discussed during their meeting was a reciprocal agreement for all of the Gulf States waiving the non-resident recreational saltwater license fee for all Gulf residents under 16 years of age and over 65 years of age. This will be discussed further at future S-FFMC meetings and at the State Directors meeting.

Several action items were deferred to other agenda items. There was no action required of the Commissioners. **C. Perret motioned to approve the report. D. Perkins seconded. The motion was approved.**

L. Simpson introduced Richard Condrey and Barney White. Dr. Condrey reported to the Menhaden Advisory Committee (MAC) and to the S-FFMC on his shark bycatch research. Barney White is a member of the MAC representing industry. Mr. White stated that the menhaden industry believes that the shark bycatch issue is an important one that needs to be addressed. Some researchers have indicated that the menhaden industry probably represents only 5 to 6 percent of the total shark mortality. Nevertheless the industry is committed to looking for effective ways to reduce shark bycatch. Last season the industry spent over \$60,000 researching effective designs for fish pumps and continue to look for a design of hose cages to solve current problems. H. Osburn asked if they had found any alternatives to using a gaff to lift sharks.

B. White stated they had not. F. Miller thanked B. White and the menhaden industry for their proactive stand on this issue. H. Osburn asked R. Condrey if funding was available for additional research and would the menhaden observer program continue. R. Condrey stated that funds were available for continued research, but not for the observer program.

NMFS/Southeast Regional Office (SERO) Report

T. McIlwain reported on behalf of the NMFS/SERO. He stated that the staff continues to strive to meet the needs of the Sustainable Fisheries Act, the Endangered Species Act, and the Marine Mammals Act. He reported that Jim Weaver was working in the SERO to direct the Sustainable Fisheries Division. Michael Bailey is in the SERO working with recreational fisheries. He reported that NMFS did not have an approved budget at this time.

USFWS Region 4 Office Report

D. Frugé reported on behalf of USFWS Region 4. He stated that FWS still did not have a budget and they were continuing to operate under the fourth continuing resolution since October 1.

He reported that FWS had awarded a \$150,000 grant to the University of Buffalo for a study to determine the effectiveness of treating ballast water with per acetic acid to kill potentially invasive species. Other projects being funded in 1999 would compare the effectiveness of various methods for exchanging ballast water at sea and exploring the feasibility of treating ballast water at dockside facilities.

FWS has implemented organizational change in the Southeast Region, establishing separate program and geographic assistant regional director positions. Columbus Brown remains the Assistant Regional Director for Fisheries. All field stations now report directly to three geographical assistant regional directors. Those individuals are: Steve Thompson for Area I; Mitch King for Area II; and Linda Kelsey for Area III.

D. Frugé reported that Panama City Fisheries Resource Office is continuing a radio and sonic telemetry study of Gulf sturgeon movements and habitat use in the Choctawhatchee River, FL. They have also conducted a Gulf sturgeon population estimate in the Apalachicola River this summer. In regards to sea turtles, he reported that a record number of Kemp's ridley turtles nested this year on the historical nesting areas on the eastern Mexico coast, and St. Vincent National Wildlife Refuge. Also reported was the first recorded instance of a green sea turtle nesting on the refuge. St. Vincent Refuge staff have been working with local citizens to get a lighting ordinance approved.

Finally, D. Frugé reported that the supervisor and staff biologist positions at the Corpus Christi Fisheries Resource Office are still vacant. There is a possibility that the office may be moved to Austin and focus its attention more on inland and imperiled fishes issues.

FY 1999 NMFS Budget

L. Simpson asked T. McIlwain if he had any information regarding FY 1999 NMFS budget. T. McIlwain reported that the budget was still being negotiated. L. Simpson gave the Commissioners an overview of both the Senate and House version of the NMFS budget. He pointed out major programs of importance to the Gulf.

Of particular interest to the Commission was the Recreational Fishery Harvest Monitoring (RecFIN) which was recommended to be funded at \$3.9 million and the Gulf FIN Data Collection Effort recommended at

\$3 million. The supporting language indicates that one-third (\$1.3) of the \$3.9 million will be distributed to the Pacific, Atlantic and Gulf states. In addition, \$3 million is provided for a Gulf of Mexico Fisheries Information Network. He pointed out that this means that the Congressional language has identified \$4.3 million for the Gulf of Mexico and the Commission in 1999. The Gulf states and the Commission have identified several activities that will be funded when these funds become available. They include the MRFSS intercept survey in the Gulf region and other commercial and recreational activities identified in the Gulf through the FIN program.

State Director's Reports

Florida - E. Conklin reported on activities in the Florida Department of Environmental Protection (FDEP). He reported that the recent state legislative session was favorable for fisheries issues. Bills passed that tightened enforcement for net and other fishery violations; there was movement to limit entry in the stone and blue crab fishery; and, new penalties for back door sales of fish by recreational or other non-licensed fishermen. In addition, the Department finally got authorization to share confidential data with the Florida Commission and other states.

He reported that the State of Florida had experienced more than its share of afflictions from drought, fire, floods and hurricanes. Flooding has caused massive induction of freshwater causing large fish kills. This had an adverse impact on the commercial as well as the recreational fishery.

E. Conklin stated that a red drum stocking program that has been conducted principally in Biscayne Bay is being phased out due to a lack of success with that program. On the other hand, a scallop enhancement program that was funded with disaster funds, has been very successful. Hurricane Georges had a large impact the lobster fishery. A large number of traps were lost. Approximately 550,000 traps were in the water when the hurricane hit. Reefs have been damaged by storm debris and he anticipates the need for a great deal of clean-up.

On a political note, E. Conklin reported that in November during the general elections, there will be a constitutional amendment on the ballot that would make the Marine Commission in Florida a constitutional agency, which would be immune from the Administrative Procedures Act. This would make it more difficult to challenge the Commissions rules.

Alabama - V. Minton reported for Alabama Department of Conservation and Natural Resources (ADCNR). He reported that Hurricane Georges had caused minimal damage to the ADCNR facilities. Dauphin Island suffered extensive damage. Debris in the sound and bays will create problems. Because of the debris, V. Minton requested a 30 day exemption for pulling TEDs from NMFS. The request was approved within one week.

The preliminary outlook for the oyster season does not look good. Biologists have not been able to look closely at the reefs but will start diving this week. Damage caused by Hurricane Danny last year resulted in a 67 percent loss of oyster reefs. The ADCNR received a \$375,000 grant which the state matched with another \$125,000 to rebuild the reefs. Approximately 6,100 yards of oyster shell had been replanted at a cost of \$65,000 just prior to Hurricane Georges. At this time the shell appears to have moved with currents caused by the hurricane. The ADCNR will continue to replant reefs although cultch material is not readily available.

Alabama shrimp crop looks fairly good. Shrimpers are harvesting 8 to 10 boxes of 21-25 count white shrimp. Debris continues to be a problem.

The Department reviewed their shark fishery at the request of the federal government. Alabama does not have a directed shark fishery and there are no plans to develop one. They have limited the shark bycatch in the gill net fishery to 10 percent of total shark caught. Other action requested by the federal government included closing the recreational snapper fishery on September 30. After review and consideration of other state's fisheries, it was decided to close the fishery on October 31. ADCNR spawning of red snapper in the laboratory continues to be successful. The program will continue in conjunction with Auburn University.

V. Minton reported that ADCNR has finally been able to increase their personnel. Kevin Anson has been hired to work on the recreational marine fishery surveys and Leslie Hartman was hired to work with crustacean.

Mississippi - C. Perret reported for the Mississippi Department of Marine Resources (MDMR). He updated the Commissioners on a series of events due to natural disasters in his state. The brown algae that was identified in early September and delayed opening oyster season has been found to be non toxic to humans. Oyster season was rescheduled to open on October 5, but was again delayed due to Hurricane Georges. He reported MDMR's new six story facility received substantial damage including water damage to the executive offices. Damage to harbors and vessels was wide-spread throughout the Mississippi Coast. Jackson County received the most damage due to flooding and high levels of rain. The Mississippi barrier islands were also adversely impacted. The majority of the oyster reefs are in the western portion of the state, where the impact was not as great. Although the season was re-scheduled to open on October 12, it was again delayed due to a spill caused by a barge. That has been cleared up and the season did open on October 14.

Mississippi was also asked to consider closing the recreational red snapper fishery. The MDMR opted not to close due in part to lost fishing time due to inclement weather. The fishery will close in state waters on October 31.

C. Perret reported that shrimpers in Mississippi had complained about the storm debris and problems related to trawls and tow trips. The MDMR requested evidence of problems so that they could document problems before seeking a TED exemption. The Department has verified the problem and a request for a TED exemption with 55 minute tow time went to NMFS this week. C. Perret anticipates a response from NMFS shortly.

C. Perret reported that legislation is being introduced this year to have law enforcement become a part of the MDMR. This type of legislation failed last year. It looks like it may occur this year.

Louisiana - J. Roussel reported for the Louisiana Department of Wildlife and Fisheries (LDWF). In regards to the oyster fishery, he reported that the moratorium on oyster leases has been lifted and new applications are being accepted. The moratorium was put into affect to address conflicts between oyster leases and coastal restoration projects. A major class action suit is pending on that issue and will be addressed in the courts in February 1999. The Department has been working on a oyster lease relocation program in an effort to relocate leases in areas with less impact.

J. Roussel updated the Commissioners on progress with the Department's trip ticket system which will be fully implemented in January 1999. The LDWF has held workshops with the dealers to solicit their assistance with developing the forms. The forms have been finalized and approved. The Department is now going out to meet with the dealers again to set-up formal training sessions to assist them with using the forms.

In regards to regulatory changes, J. Roussel reported that a notice of intent to implement rules to establish billfish regulations which would be 100 percent consistent with those in federal waters. In addition, the state has established an annual commercial permit for commercial take or possession of sharks. Along with the permit, there is a requirement for a monthly report to establish recreational bag limits and commercial trip limits. There will also be a seasonal closure of the directed fishery from April through June.

The Department is implementing a log book data collection program with offshore shrimpers and charter boats. The aim of the program is to gather information on the impact of the hypoxia area on their operations.

Since the past spring, three new oil and gas structures have been added to Louisiana's artificial reef program. There are now a little over 70 artificial reef structures offshore.

J. Roussel reported that the House Natural Resource Committee will meet next week to once again to address the Sunset hearings for the LDWF. The Louisiana Department of Natural Resources will also be addressing Sunset hearings. The Committee is looking at the possibility of merging the two agencies.

Preliminary observations of Chandelier Island show that Hurricane Georges has impacted the island. There are numerous cuts through the island; in fact during high tide it is hard to tell that there is an island.

J. Roussel reported that Louisiana's oyster lease survey section data base is now available on the Internet. This information is highly sought and was well received. In addition, non-residents may now purchase their recreational license on the Internet with a major credit card. He also passed around a brochure that was written in conjunction with the Department of Health and Hospitals and the Department of Environmental Quality that addresses the issue of mercury in fish.

F. Miller reported that it appears that the gill net lawsuits are now over in the State of Louisiana. The Louisiana Supreme Court ruled on the portions of the gill net law that were ruled unconstitutional by the trial courts. The Supreme Court reversed the trial court, finding that there was no taking of property and no violation of due process. In September the First Circuit Court of Baton Rouge ruled that there is no inherent right to fish. F. Miller stated that fishing is a privilege and it is within the ambit of any state through its legislature to regulate the exercise of that privilege.

F. Miller also advised the Commissioners of a private effort underway in Louisiana to work with the LDWF to develop some inshore artificial reefs. One problem is abandoned oil and gas structures in inside waters. These structures have become very productive recreational fishing areas. Under current law these abandoned structures would be altered. There is movement to work with LDWF to have the abandoned oil and gas structures stay in place as they sit. In addition, F. Miller reported that Hurricane Frances impacted the east side of Sabine Lake, where a large fish kill occurred. Although several species were killed, flounder was the hardest hit.

Texas - H. Osburn reported for Texas Parks and Wildlife Department (TPWD). He advised the Commissioners of several changes in the Coastal Resources Division since he has become Director. M. Ray has been upgraded to a division director as well as other within the division. A new position will be hired to address social and economic data needs in this new co-management approach.

Texas experienced various damage from the tropical storms, including low oxygen water in the bays which created fish kills in the Galveston and Sabine areas. The Seabrook Marine Lab had severe damage due to storm surges.

The TPWD is currently addressing turtle management options, focusing on the shrimp and turtle issues, particularly off of Padre Island. H. Osburn will report back to the Commission on the outcome of these efforts.

Texas has a legislative session coming up and of particular interest to coastal fisheries will be the results of the interim study that was conducted by Senator Brown's Senate Natural Resource Committee on general licensing authority for TPWD. There was a recommendation regarding providing the Department new authority for dealing with the coastal commercial fisheries. Other issues that will be addressed will be aquaculture and water.

M. Ray reported that there is no presence of vibrio in Galveston at this time.

NMFS Research Vessel the *Gordon Gunter*

T. McIlwain reported that the NMFS Research Vessel the *Gordon Gunter* was commissioned on August 28, 1998 in Pascagoula. The Secretary Commerce, Senator Trent Lott, Rollie Schmitten and other dignitaries from the NOAA Corp were present for the ceremony. Several hundred people attended as did Dr. Gunter and his family. L. Simpson attended the ceremony and was proud the Commission had been involved in requesting to have the vessel name changed to honor Dr. Gordon Gunter.

Status of Commission's Ongoing Current Cooperative Data Collection Programs

D. Donaldson updated the Commissioners on the Fisheries Information Network (FIN) program, that consist of ComFIN and RecFIN which deal with both commercial and recreational data collection. These programs were initiated in early 1990's to address problems identified by the states, the Commission and the Council. It is a state-federal cooperative program to collect, manage, and disseminate commercial and recreational fisheries data. The program goals are to plan, manage and evaluate a data collection program; to implement the program; to establish and maintain a data management system; and, to support the development and operation of a national program. He briefly discussed the recent activities of the ComFIN and RecFIN Committees and upcoming plans for future activities.

D. Donaldson reported that efforts to fully implement RecFIN are moving forward with the cooperation and involvement of the states. In November the states will begin field intercept work on the Marine Recreational Fishery Statistics Survey (MRFSS) as part of the transition activities. The States will not only continue with the pilot charter boat survey, but they will also be collecting data samples from private rentals and shore boats. This data will not be used for management decisions but is a training exercise for the Commission and states. The data will be sent to NMFS as required by established deadlines. Meetings are being held to coordinate effort and training sessions are being conducted. Information developed during this transition period will be used to fully implement the RecFIN program in 1999.

D. Donaldson stated that although collection of menhaden and head boat data has been included in the program in the past, funds have not been identified for 1999 at this time. He reported that the SEAMAP program is working on a task identified by ComFIN to develop a process for coordinating fishery dependent and independent activities. In addition the Commission and states will be working together to put data collected through the SEAMAP program on the Internet.

Report on Joint Habitat Program with Councils

J. Rester reported that the Essential Fish Habitat (EFH) document has been completed. The Council's Habitat Subcommittee reviewed the document and their comments were submitted to the Council's Technical Review Panel. The document was reviewed for the second and final time. Changes were made and the document was presented to the full Council prior to further review by the advisory panels and public hearings. The Council approved the EFH document in September and it has been forwarded to the NMFS as required.

J. Rester reported that he will continue to work with the Council and Commission to develop a joint habitat program. He also advised the Commissioners that he will be working as the new SEAMAP Coordinator.

Executive Committee Report

J. Roussel reported that the Executive Committee had a early morning breakfast meeting. They reviewed the financial statement, the proposed FY99 budget, and personnel issues. The financial statement as of September 30, 1998 was distributed. The Commission financial status is good.

On behalf of the Executive Committee J. Roussel motioned to approve the FY99 budget in the amount of \$3,020,615.00. V. Minton Seconded. The motion was approved.

J. Roussel motioned that all Commission staff (except three new hires), receive a 5 percent increase. In addition to the 5 percent increase the following recommendations were made for the Executive Director - \$2,700; Assistant Director - \$3,000; Data Program Manager - \$900; IJF Coordinator - \$500; RecFIN/ComFIN Staff Assistant - \$1,000; and, the Staff Accountant - \$1,000. V. Minton seconded. The motion was approved.

Future Meetings

G. Herring reported that five requests of a proposal were submitted to hotels for the 50th Anniversary meeting of the Commission. Four responses were received. After review, it was decided by the Committee to meet at the Casino Magic Hotel in Biloxi, Mississippi on October 18-21, 1999. Plans are under way to develop a theme, R. Lukens will put together a general session. Other preparations to commemorate the 50th Anniversary of the Commission include developing a special logo, mementos for participants, and a publication with resolutions from the various State Governors.

The Spring 1999 meeting will be held March 15-18, in New Orleans, Louisiana. **C. Perret motioned to approve the report. F. Miller seconded. The report was approved.**

Publication List

L. Simpson stated that 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

L. Simpson reviewed voting procedures and historical rotation of Commission officers. **C. Perret nominated George Sekul for Chairman. D. Perkins seconded. George Sekul was elected by acclamation.**

V. Minton nominated Ed Conklin for Vice Chairman. C. Perret seconded. Ed Conklin was elected by acclamation.

J. Roussel nominated Fred Miller for 2nd Vice Chairman. C. Perret seconded. Fred Miller was elected by acclamation.

Presentation to Outgoing Chairman

On behalf of the Commissioners, L. Simpson presented Senator Brown a gift in appreciation for his service as Chairman. Senator Brown thanked the Commissioners and complimented the staff for their assistance during the past year.

Other Business

F. Miller motioned to shorten the Commission Business Meeting. Instead of meeting on Thursday afternoon and then again on Friday morning, he felt that a Thursday afternoon meeting would work since the last three meetings have ended on Thursday. **C. Perret seconded the motion with the understanding that the Commissioners would meet on a single day for as long as necessary. The motioned was approved.**

The meeting was adjourned at 5:00 pm.

GULF STATES MARINE FISHERIES COMMISSION

FY99 Budget

January 1, 1999 - December 31, 1999

	FY99 Operating Funds	FY99 Total Grants	FY99 Total Budget
EXPENSES			
SALARIES			
Personnel (designated)	56,220	471,764	527,984
Personnel (not designated)	0	398	398
Contract Labor	0	0	0
Health Insurance	5,335	78,241	83,576
Retirement	3,935	32,751	36,686
Payroll Taxes	6,701	35,939	42,640
MAINTENANCE/OPERATIONS			
Facilities	17,856	5,400	23,256
Office Supplies	3,000	18,650	21,650
Postage	1,400	16,460	17,860
Professional Services	2,000	12,115	14,115
Travel (Staff)	8,000	28,256	36,256
Telephone	4,000	28,891	32,891
Office Equipment	0	16,000	16,000
Copying Expenses	2,000	15,400	17,400
Printing	3,500	19,100	22,600
Meeting Costs	15,000	16,150	31,150
Subscriptions/Dues	1,000	400	1,400
Auto Expenses	2,000	11,802	13,802
Insurance	3,400	9,124	12,524
Maintenance	1,000	9,708	10,708
Petty Cash	300	0	300
Taxes (property)	1,033	2,755	3,788
Committee Travel	0	212,317	212,317
Contractual	0	1,818,151	1,818,151
Utilities	2,152	5,368	7,520
Janitorial (service/supplies)	4,304	10,735	15,039
TOTAL	\$144,136	\$2,875,875	\$3,020,011
INCOME			
STATE CONTRIBUTIONS			
Alabama	22,500		
Florida	22,500		
Louisiana	22,500		
Mississippi	22,500		
Texas	22,500		
TOTAL DUES			112,500
INTEREST	6,500		6,500
REGISTRATION FEES	4,500		4,500
FUNDS FROM RESERVES	0		0
RENT	21,240		21,240
GRANTS			
SEAMAP		80,564	
Interjurisdictional Fisheries		250,000	
Sport Fish Restoration		200,000	
Council		30,000	
Habitat		42,530	
FWS		35,224	
RecFIN/ComFIN		2,222,048	
Striped Bass		15,509	
TOTAL GRANTS			2,875,875
TOTAL	\$144,740	\$2,875,875	\$3,020,615

Mike Buchanan
6/10/99

**TCC ARTIFICIAL REEF SUBCOMMITTEE
MINUTES
Tuesday, October 20, 1998
Jekyll Island, Georgia**

Chairman Jon Dodrill called the meeting to order at 1:00 pm. The following members and others were present:

Members

Mike Buchanan, MDMR, Biloxi, MS
Jan Culbertson, TPWD, Houston, TX
Les Dauterive, MMS, New Orleans, LA
Jon Dodrill, FDEP, Tallahassee, FL
Jim Duffy, ADCNR/MRD, Dauphin Island, AL
Rick Kasprzak, LDWF, Baton Rouge, LA
Wally Wahlquist, USFWS, Atlanta, GA

Staff

Ronald R. Lukens, Assistant Director, Ocean Springs, MS
Nancy K. Marcellus, Administrative Assistant, Ocean Springs, MS

Others

Tom Maher, FDEP, Tallahassee, FL
Doug Peter, TPWD, Houston, TX
Bill Carson, Coastal Reef Builders, Inc., Pensacola, FL

Adoption of Agenda

R. Kasprzak moved to adopt the agenda as presented. The motion was seconded by M. Buchanan and unanimously approved.

Approval of Minutes

R. Kasprzak made a motion to approve the minutes from the June 8-9, 1998 meeting. The motion was seconded by J. Culbertson and the minutes were unanimously approved.

Side Scan Sonar Presentation

J. Dodrill reported that Florida had about 5,000 dollars available from saltwater fishing license money last fiscal year to conduct a pilot project looking at the feasibility of using side scan sonar technology to map and document the location of artificial reef materials on artificial reef sites. They were looking at ways to improve upon the labor intensive diving and mapping surveys in generally poor visibility. The State of Florida had not utilized side scan before with respect to permitted

TCC ARTIFICIAL REEF SUBCOMMITTEE

MINUTES

Page -2-

artificial reef sites and the materials. They selected a number of sites in the eastern panhandle and Big Bend area to survey.

Tom Maher, project manager, distributed a copy of the report from Florida State University with the meeting materials. Maher reported that the Florida State University program is an Underwater Archaeology program, and they have been using the side scan technology to assist them in locating new undiscovered shipwrecks, mapping out the existence of known shipwrecks, and documenting other state archeological sites. This is the first time they have used the technology in the artificial reef arena. Maher added that the technology has a lot of potential in every state's program with the caveat that when state agencies collect the data, it becomes public knowledge. There may be information in the files that a state may not want to be public knowledge. Specifically, Maher was referring to locations of materials that no one knows about, that have been deployed by private individuals, or hard bottom areas that are serving as refugia. During this contract, FDEP had to go through a third party and immediately upon seeing the results of this technology they wanted to publish all of the information in a commercial publication for profit.

Chuck Meade, a graduate student at Florida State University in the Department of Anthropology, gave an overview of the technology of side scan sonar with a presentation entitled,

*Florida State University
Program in Underwater Archaeology
Artificial Reef Imaging with Side Scan Sonar*

Meade, an underwater archaeologist, reported that traditional archaeologists working under water have used diving technology, but there are a lot of applications for the side scan sonar technology. If there is low visibility, information can be obtained on the overall environment of a site, a site can be monitored, or new sites can be explored.

Meade indicated that they were using a Marine Sonics Seascan PC. It is completely computer integrated and a lot of data can be obtained while in the field. The unit itself stores the images on the hard drive so that it can be either lap linked to another computer or put on a zip disk to analyze the data on the desktop. Items can be measured on the computer screen.

Maher pointed out that he had looked at each of the images, and approximately one half of them had some kind of material or hard bottom on them. The amount of information that is contained in the data files took two days for the side scan sonar to collect and would have easily taken two man months of diving time to collect.

Lukens reported that there have been discussions about issues like footprint and trying to get volumetric measurements, and that information could be collected using the subject technology. Regarding essential fish habitat, one of things that is lacking is the total coverage of reefs, both artificial and natural. The proportion of reef areas to other type bottoms, such as sand and mud flats,

TCC ARTIFICIAL REEF SUBCOMMITTEE

MINUTES

Page -3-

is another important issue for which data are needed. With that information, it is possible to measure the footprint and translate that into available habitat area in square feet.

Lukens added that the Commission conducted a side scan sonar demonstration project comparing side scan and diving several years ago. It was a good report but a lot of things have changed since then, primarily the computer assisted work. At that time, doing the side scan part was easy, but a technician had to spend hours processing the information. Lukens discussed the possibility of purchasing side scan equipment to make available to the state programs on a rotating basis to monitor. If it were possible to do this, the states would only have to find boat time. The Subcommittee agreed that it would be useful to have that equipment at the Commission office. Lukens said he would begin discussions with the FWS regarding procedures to purchase such equipment. Lukens asked the Subcommittee members to think about it between now and the next meeting if it would be worth pursuing further.

Gulf of Mexico Artificial Reef Data Base

The first thing Lukens discussed regarding the data base was consistency. Lukens encouraged Subcommittee members to go back and read the data base documentation which includes all the data descriptions and all field descriptions. Lukens noted that a blank field indicates that the information is available and will probably be added in the future. If the information is not locatable, a NL is required in that field. If it is a numerical field, as indicated by the documentation, a number code of either 8s or 9s is required. For items which are not applicable, 8s are to be used, and for items not locatable, 9s are required. When updating the data base, it was agreed that the states would send the entire updated data base each time.

The following is a partial transcript on the data base discussion:

Dodrill - I'm really pleased with the effort Maher has put into the Florida database. The 88GP601104 permit number for City of Mexico Beach is entered twice in the database. The reason is, it expired in '93, but was reauthorized in '95. To me it is misleading to say there 600 permitted sites when in fact there are multiple instances of duplicate records.

Maher - Duplicates can be eliminated by sorting by reef site name.

Dodrill - I think the database is cluttered right now, it is tough to work with.

Lukens - This is something Maher and I discussed on the phone, that is another issue I want to get to and that is a unique identifier. This is a real problem and the only way we can address it is for each office to spend time identifying duplicates and re-permitted sites.

Maher - One suggestion is to list only currently active sites. I have a real problem with that, because you are not tracking all sites that have been permitted.

TCC ARTIFICIAL REEF SUBCOMMITTEE

MINUTES

Page -4-

Lukens - We intend to have to have inactive permitted sites in the database. So if you don't have those in here, we need to have them. That is why we have that field that says active permit yes or no. Just because it is not an active permit doesn't take away the issues that we are dealing with.

Dodrill - I am saying you have got an active permit and an inactive permit on the same site.

Lukens - Exactly. And we really want to take the inactive part out. But the permit number changes.

Maher - There are two completely different situations here. I know because I've lived with this thing for 2 years. One is that the sites are re-permitted every 5 years with the same permit number and the same site name, however, the dimensions and the center coordinates and the corner coordinates change over time.

Dodrill - Sometimes yes, and sometimes no.

Maher - I see the point that Jon is trying to get at to reduce the number of entries. If it is a duplicate site that has never changed over time, keep only the most current record. That's going to take someone with an intimate knowledge of that database to sort through the database to get rid of those duplicate records. And physically it means identifying that in 1978, 1983, 1988, 1993, 1998, there are 5 records of that Mexico Beach site, now did it at any point in time have a different coordinate, are there different center coordinates because the technology changed over time. Theoretically you would use the newest record, which should be the most accurate and most correct.

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 for new permit numbers? In other words have the most current permit number and then columns for expired permit numbers.

Maher - That is not a bad idea, Jan. Have your sites ever changed names?

Culbertson - No.

Maher - That might be a real good way to do this. Add several columns for first permit number, second permit number, third permit number.....for the same site, and then maintain the largest area that was permitted. Because, in Florida, there are areas where the permitted size has shifted over time.

Lukens - Theoretically if all the materials are contained within the currently permitted boundaries than past permit boundaries are irrelevant. The only reason you care is if the boundary shifted, but there is something now outside the permit. And that is something that we have to find out about because then that would be an out-of-compliance situation.

TCC ARTIFICIAL REEF SUBCOMMITTEE

MINUTES

Page -5-

Buchanan - He has got a tough situation because sometimes the new permits do not enclose sections of the old permit, is that right?

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.

Maier - Normally in Florida it goes the other way, the permit site is increased every reauthorization, for obvious reasons.

Dodrill - I guess looking at it from the standpoint of the user. It would be helpful to know the most current permit, whether it was inactive or active, and go across and see what other prior permit numbers this was known by rather than having them mixed in.

Maier - What you do to get you that in hard copy is to sort by county, first by reef site name, second by permit date, and then I can get that for all the different permit numbers for the same site. It is very easy to get that from the data base by sorting.

Lukens - So what you are all saying is that you are endorsing adding some columns as Jan has suggested, say up to five, as a permit expires and a new one is put on you retain those old permit numbers if they change.

Kasprzak - What difference does it make, why would you want to know the old permit number?

Culbertson - For tracking.

Kasprzak - I don't care, I just want to know what the active one is.

Dodrill - That is the priority, and that is what I want to see. It is important also to know how long the site has been around.

Kasprzak - You have a date when the first material was put on there, you have the current permit number. We have one that we permitted 3 times. We moved the boundaries on it, some of them we keep exactly the same. The problem is when you go to the Corps inquiring about a permit, and you give them the old permit number, they will not know what you are talking about.

Maier - In our case, the Corps uses that old permit number.

Culbertson - In our case, too.

Peter - I agree with a the need to retain that old permit history, because they might change permit number, they may even want to retain that boundary information. The problem is this database is flat. It really needs an identifier and then the older stuff needs to be in a separate table off to the side easy reference. The problem is this is just a spreadsheet.

TCC ARTIFICIAL REEF SUBCOMMITTEE

MINUTES

Page -6-

Lukens - That is what items 2 and 3 on the agenda are all about, and also a reference I made this morning to the OCS data. Ultimately we are going to be using Oracle using relational files, and what we would like to be able to do relate different files because you retain so much more information while not keeping it in the main database. You use a unique identifier and click to the other database.

Dodrill - I foresee in the future using ArcView and mapping out these existing and historic permitted sites and looking at them in relation to each other.

Duffy - I believe that you will be sacrificing resolution if you loose the old coordinate data. The site that was permitted, if you are going to retain the permit number I think you should retain everything about that record, because that is a unique layer in your data.

Maher - I agree.

Dodrill - So you are saying lump the current site and historic sites which relate to that site right together with the most recent one at the top of the list.

Lukens - We have to talk about that one because I think from a user perspective that is going to be terribly confusing. An easier way to manage it is to have an identifier that takes you to a secondary database that retains all the old information. That way you minimize confusion. If all the old permit data are in the main database, it appears to be conflicting information.

Lukens - I want to take your attention to the fields OCS Block Number and Active OCS. Michelle Morin with Minerals Management Service in New Orleans provided us with all the OCS data. She took all of the latitude/longitude coordinates that we have and provided us with the information on the areas, the block numbers and whether they are active OCS leases or not. So what I thought about doing is separating it out into another database I retained the state, the permit number as relational fields to make sure we knew exactly what we were talking about. And then we added is it an active or inactive site. NA means not applicable - more than likely that is a near shore site that is not in an OCS block number. If it is in state waters and it doesn't have an OCS block number than it is going to have a NA, unless you think it is important to have a state track number.

The block number means is this is the first coordinate that she came to, it is not configured in any protocol. These are in the order you gave them to me, and this is how she accessed them. Block number 1 is the first coordinate. Her problem was that these are polygons, squares, and rectangles, and they span different block numbers. Active Lease is the actual lease number. We are probably going to change this a Y for yes.

Lukens - In your packet please pull this out (table from "A Profile of Artificial Reef Development in the Gulf of Mexico). This is the tabular information that was in the publication that we did some years ago. We talked about updating it. It is my current agreement with the FWS that we will

TCC ARTIFICIAL REEF SUBCOMMITTEE
MINUTES

Page -7-

republish this this year. In fact, we were going to do it last year and I asked for some indulgence because we weren't far along enough in the database. What we can do now to update this thing, if we get comfortable with the database to some degree, is we can select fields and create these tables without having to do it by hand like we did the last time. What I want you to do before we leave today is tell me if you want to keep this same table format. This is just for general information, we are not trying to give them everything that we got. These were the informational fields that you wanted to include in the tables the last time. These are just considered to be sort of mid points, which we don't have and it is going to complicate things a little bit more if we are to do it automated and just download it from the database. Some of these things aren't even in the database, for instance, for Alabama there are a number of entries in the Alabama table in this publication that are not in the database, it is just simply because there was a miscommunication when Mark was putting this together. I have since talked to him and we need to do something about that. Do you want me to do a mock up and send it out and show it to you?

Kasprzak - Yes, why don't you do that.

Lukens - Is that ok with everybody?

Culbertson - I am still confused by what you are asking. This is the old table, are you going to change the headings, or are you asking us if we want to change the headings?

Lukens - That is what I am asking.

Buchanan - Put in the 4 corner coordinates?

Lukens - That is what I am curious about. When we did this before our major effort was to keep it on one page because of publication issues, so you wouldn't have to go on the same table on multiple pages.

Maher - I think from a cost standpoint, from the user that is going to look at that publication, giving them corner coordinates and stuff is going to be overkill. I think this table with the fields that it has got in it is exactly the casual user needs. Anything more is going to be confusing. That is my personal opinion.

Lukens - I tend to agree with you. Should we add a center coordinate or just use one of the corners? That would provide a general idea where it is.

Dodrill - That would be my suggestion rather than to create a lot of additional legwork, pick a corner and leave the others out.

Lukens - Mr. Chairman, if I could continue, with the current interest in artificial reefs as habitat, it is important to have a database that has actual deployments in it. With what we saw today (side scan

TCC ARTIFICIAL REEF SUBCOMMITTEE
MINUTES

Page -8-

sonar presentation), we can actually start getting a handle on footprint, square area , volumetric measurements, etcetera.

Lukens - I think this should be in a separate database, but it has got to be linked, so you have to have that unique identifier in order for it to be useful. I mainly wanted to bring this up so I could get a feel for if you want to go forward with this.

Kasprzak - I think we should.

Duffy - Materials move around, so the deployments may be current today and not current tomorrow. Consequently, numbers that you produce regarding volumes, footprints, and things like that are not etched in stone.

Lukens - That is why this has to be a living thing in order for it to be useful.

Duffy - Which means you have to routinely return to these sites and verify if they are still there and are in the same configuration.

Lukens - That is true, and certainly for the information that we have available it has to be dated. We may find that this is going to be too complicated, too expensive, too time consuming.

Duffy - And the point of this is EFH?

Lukens - It is not EFH, it is essential habitat. In other words, it is not EFH in the sense of adhering to the Magnuson-Stevens amendments. It is essential fish habitat in the sense that we have the capability to do more, to know more about the relationship between habitat and the associated organisms, not just within the federal EFH context, but in the broader essential habitat sense.

Lukens - Now, Mr. Chairman if I can move quickly into the literature database demonstration. This is a project to enter artificial reef literature into a literature database called ProCite. I want us to institute a process where we are able to maintain a fairly good archive of artificial reef literature, both refereed journals and gray literature. The current database includes literature received from the Sport Fishing Institute after they merged with the American Sportfishing Association. The GSMFC got half of the archive, and the ASMFC got the other half. We will eventually have a full complement, including the literature at the ASMFC, because we are not going to have anything in the database for which we do not have a hard copy.

White Paper Development

Lukens explained that the development of this white paper is included in the 1999 work plan under the Wallop-Breaux grant. A copy of the latest version of the white paper was distributed which included Subcommittee changes and specific issues highlighted. There was some discussion regarding general permits and Lukens asked for some help in drafting language on the description

TCC ARTIFICIAL REEF SUBCOMMITTEE

MINUTES

Page -9-

of a general permit. It was decided to add another section called Large Area Permits since general permits and large area permits are two different issues. The issues included in the white paper have caused some significant debate over the last few years, so the point behind this exercise is to think about those issues to give to the Commission to establish a formal position at that point in time. A lot of the issues that will be discussed have very little data to support them. That is why it is a white paper and not a paper for publication, because it is not conclusions based on of data. Lukens feels that it will be quite valuable and will also be something that will have to be revised periodically because as more is learned, these issues change.

Lukens asked that the Subcommittee focus on the topics and start developing the sections and agreeing to language and come to some conclusion as a group. This activity is to be completed by December 1999.

Publication of State Project Reports

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 two articles. There was some discussion about what types of information should be published. J. Culbertson advised that she may have some information that may be of interest. At this time Lukens will hold the two articles he has with the hopes of publishing the first issue when four to five articles are received.

Next Meeting Time and Place

Lukens recalled that at the last meeting in New Orleans, Kasprzak suggested that regular Subcommittee meetings be held on a rotating basis at the various state agencies. Austin, Texas was selected as the first meeting site during the May-June time frame. Lukens will work with J. Culbertson on the details of the meeting.

Election of Officers

J. Dodrill suggested that the Subcommittee handle the election of the chairman and vice-chairman in the way that the Atlantic does. That process is the vice-chairman moves up and automatically assumes the responsibilities of the chair and a new vice-chair is elected.

J. Culbertson made the motion that the Subcommittee vice-chairman automatically moves up and assumes the responsibilities of chairman and an election is held for the position of vice-chairman. Kasprzak seconded the motion, and it was unanimously approved.

M. Buchanan was welcomed as the incoming chairman.

L. Dauterive nominated J. Culbertson for vice-chair and J. Dodrill seconded the nomination. There being no other nominations, Culbertson was elected as vice-chair.

Other Business

Culbertson requested an update on the MMS/QuanTech project. Lukens reported that QuanTech did not get the contract for the MRFSS. As recalled from Bob Hiatt's presentation at the last Subcommittee meeting, QuanTech's project was based on using the MRFSS as a sampling vehicle. The states through the Gulf Commission are going to conduct the survey beginning in January. QuanTech has asked that states, through our Commission, to collect the data for them. There is a problem, and it is not as simple as it may seem. Periodically, an economic add-on is conducted with the survey. The economic add-on is going to be done in the Gulf of Mexico January 1999, the whole year. So during this economic add-on QuanTech wanted to ask a few other questions, tie it to the economic add-on, and get economic information to give to MMS. This makes sense, except when there is already an economic add-on and then another add-on. With surveys people do not like to stand at the dock, when their fish are in the box and they are ready to go home. In addition, QuanTech offered a maximum of 45 cents an intercept to collect the data for them. Throughout the year for Mississippi, Alabama, and Louisiana, which are the states where it will be done for the party charter boat and the private boat mode, there will be about 5,000 interviews. Five thousand times 45 cents is \$2,300. The states will not do it for that. It would cost a lot more. The total price tag on the survey is about \$400,000 and QuanTech wants to give the states \$2,000 to collect the primary data. Of course they are going to do a phone survey too as part of the project. Following a discussion of this issue at the Commission's annual meeting, the Data Management Subcommittee agreed to 3 questions. Those 3 questions would be: (1) Did you fish within 300 feet of an oil rig, oil or gas structure, or an artificial reef made from an oil and gas structure? That is the number one screen question. If the answer is no, there would be no further questions. If the answer is yes, the second and third questions would be: (2) What percent of your fishing day did you spend fishing around an artificial reef or an oil structure? and (3) Would you mind if we called you back for a more extensive interview? That is what the states are willing to ask. The other things QuanTech wanted were problematic and that states would not agree to it. That is the status of this project at this time.

Dodrill asked for a clarification on the minutes from June 8, 1998. On page 5 under Discussion of Ships, last sentence "The Subcommittee agreed that until EPA comes up with a protocol and an environmental impact statement on cleaning these Navy ships, no vessels will be released. Dodrill asked if this was a Subcommittee policy statement. Lukens advised that it was simply a summarization of the discussion and not meant to be an official position of the Subcommittee.

TCC ARTIFICIAL REEF SUBCOMMITTEE

MINUTES

Page -11-

Lukens briefly discussed a handout regarding the Organization for Streamlined (Designed) Artificial Reef Permitting. A website (<http://reefball.org/sdarp/>) was provided so that Subcommittee members could access the site and read what they are proposing.

There being no further business, the meeting adjourned at 5:05 pm.



JOINT ASMFC/GSMFC ARTIFICIAL REEF MEETING
Tuesday and Wednesday, October 20-21, 1998
Jekyll Island, Georgia

M. Bell called the meeting to order at 9:00 am. Bell noted that both the Atlantic and Gulf committees would meet jointly until 12:00 n. and following lunch the committees would hold separate meetings. The joint committee would then reconvene on Wednesday morning. The following members and others were present:

Attendees

Todd Barber, Reef Ball Development Group
Scott Bartkowski, Artificial Reefs Inc., Gulf Breeze, FL
Dennis Bedford, CDFG, Long Beach, CA
Larry Beggs, Reef Ball Development Group, St. Cloud, FL
Mel Bell, SCDNR, Charleston, SC
Tony Blount, GDNR/CRD, Brunswick, GA
Mike Buchanan, MDMR, Biloxi, MS
Pat Carter, USFWS, Atlanta, GA
Jan Culbertson, TPWD, Houston, TX
Les Dauterive, MMS, New Orleans, LA
Jon Dodrill, FDEP, Tallahassee, FL
Jim Duffy, ADCNR/MRD, Dauphin Island, AL
Clark Evans, GDNR/CRD, Brunswick, GA
Ginny Fay, NMFS, Silver Spring, MD
Bill Figley, NJDFG, Port Republic, NJ
Burt Heimer, US Army COE, Jacksonville, FL
William Horn, FDEP, Tallahassee, FL
Ed Irby, FDEP, Tallahassee, FL
Shaun Jordan, GDNR/CRD, Brunswick, GA
Rick Kasprzak, LDWF, Baton Rouge, LA
Kathy Kirbo, Reef Ball Foundation, Woodstock, GA
John Kraft, Artificial Reefs Inc., Gulf Breeze, FL
Bev Lawrence, US Army COE, Jacksonville, FL
John Little, USCG, Washington, DC
Tom Maher, FDEP, Tallahassee, FL
Bob Martore, SCDNR, Charleston, SC
Steve Murphey, NCDMF, Morehead City, NC
DeWitt Myatt, Ocean City Reef Foundation, Easton, MD
Doug Peter, TPWD, Houston, TX
Chris Powell, RIDFW, Wickford, RI
Lynn Preston, National Ocean Service, Silver Spring, MD
Bill Price, NMFS, Silver Spring, MD
Harry Rolfe, Reef Ball Development Group, St. Cloud, FL
Steve Shelton, NCDMF, Morehead City, FL

JOINT ASMFC/GSMFC ARTIFICIAL REEF MEETING
MINUTES

Page -2-

Frank Steimle, NMFS, Highlands, NJ
Jeff Tinsman, DDFW, Little Creek, DE
Ginny Vail, FDEP, Tallahassee, FL
Joe Vickery, GDNR/CRD, Brunswick, GA
J. Wade, Reef Ball Foundation, Atlanta, GA

Staff

Richard Christian, ASMFC, Washington, DC
Ronald R. Lukens, GSMFC, Ocean Springs, MS
Nancy Marcellus, GSMFC, Ocean Springs, MS

Approval of Agenda

The agenda was approved without objection after changing the order of several items on the agenda due to individual time schedules.

Report on Profiles Database

Lukens reported on the background of the artificial reef database. The original database was housed at the Artificial Reef Development Center (ARDC) of the Sport Fishing Institute. Due to a merger among a number of the sport fishing organizations the ARDC was disbanded. After realizing that the ARDC would not be replaced, the Commissions decided to look into the fate of the database and see if it could be updated. After acquiring the database it was felt that it could not be updated, and it would be easier to develop a new database. Lukens presented that database for the Gulf which at this point has approximately 600 entries. It is a work in progress, with current efforts to standardize. There are also a lot of blank fields. Lukens said he feels that a lot of the blank fields will probably remain blank, because a lot of the data is taken from old permits that do not have very much information. Lukens displayed and reviewed each of the data fields. Since the Atlantic committee is considering such a database Lukens thought it would be advantageous for the Joint Committee to see it. Lukens noted that each state is keeping their own information so they would not have to access the regional database to look at their own data. Lukens stressed the importance of making the database as complete as possible.

Lukens went on to show the Joint Committee another database in progress, the literature database. Another function of the ARDC was to serve as a clearing house for publications and gray literature for artificial reefs. When that organization disbanded they split the literature between the Gulf and Atlantic States Marine Fisheries Commissions. At this time the Gulf Commission has contracted to have someone enter all of that information into ProCite, a literature database. Lukens said he would like to rely on this group to help keep this database updated as new literature is published. Plans are to allow individuals to scan the database from the GSMFC web page.

Overview of South Atlantic Fishery Management Council Habitat FMP

This topic was discussed to let every one know that the concept of Essential Fish Habitat (EFH, any habitat used by federally managed fish species for breeding, feeding, spawning, growth to maturity) has been incorporated into fishery management plans of both the Gulf of Mexico Fisheries Management Council and the South Atlantic Fisheries Management Council as required by the Magnuson-Stevens Fisheries Management Act. Future federal management activities must consider implications of EFH in management. There are currently no formal regulations associated with EFH. Artificial reefs may be considered as EFH.

Christian emphasized that the database as presented by Lukens takes on greater importance due to the EFH provisions. The South Atlantic states were involved in a subcommittee of the South Atlantic Council to start locating artificial reefs and begin a data base for EFH as mandated in the Magnuson-Stevens Act. Christian added that the Atlantic committee, in order to have a compatible database, would probably use the Gulf format, except for the OCS data.

Christian added that currently, within the South Atlantic's FMP, artificial reef structures are designated as EFH for certain species of snappers and groupers. He does not know what the implications of that are yet, but EFH has to be protected under law.

Bell encouraged all to get a copy when the final draft is distributed from the Council. One of the most important things in it is that artificial reefs, man-made reefs, or constructed reefs, are given recognition as habitat. While that may seem obvious to the group, it is not necessarily obvious to others.

Presentation by the National Ocean Service on Mapping Fish Havens

Lynn Preston, head of the Nautical Data Branch of the Office of Coastal Survey under the National Ocean Service (NOS) gave a presentation to the committees. Preston reported that the National Ocean Service is congressionally mandated to promote safe navigation and contribute to the national economy and coastal stewardship within the 95 thousand miles of shoreline and 3.5 million square miles of ocean,. Their goals are to increase awareness of the impact of large area artificial reef sites; stress multi-agency accountability to review proposed sites and provide comment; and to influence the Artificial Reef Plan language to address navigational safety issues. Preston stressed the multi-agency responsibility of reviewing artificial reef permits. NOS is in the permitting loop when they receive a public notice from the Corps of Engineers regarding a proposed artificial reef site. When they receive a notice, NOS checks for inaccuracies and completeness of the application. If the Corps ultimately issues a permit, nothing is charted by NOS until the first deployment of reef materials at that site is reported to them.

In the application and permitting process, Preston stressed the importance of avoiding entrance channels, anchorages, safety fairways, unexploded ordnance areas, missile test ranges, oil and gas pipelines and other buried or submerged lines, and being aware of the implications of critical habitat.

JOINT ASMFC/GSMFC ARTIFICIAL REEF MEETING
MINUTES

Page -4-

Several examples of concerns were presented, with most having been previously discussed at earlier interagency meetings facilitated by the Coastal Zone Management Program of the Department of Community Affairs in Tallahassee in October, 1997, and February and June of 1998. These included reef sites in a ship anchorage (Broward County), reef sites in the middle of a shipping approach channel (City of Port St. Joe), a reef site in a missile test area (Bay County), permitted large areas abutting safety fairways off Mobile, Alabama, permitted sites in a Trident nuclear submarine approach lane, reefs exceeding minimum allowable clearance, reefs placed outside permitted areas (Nassau County), reefs placed in locations where maritime barge/tug commerce is disrupted and rerouted, increasing transportation costs (Delaware), numerous reef sites off the approach to Mayport Naval Installation (Duval Co., Florida). Most of these issues, which have been highlighted in a presentation to the Pentagon on two occasions, have been resolved or are in the resolution process.

The Department of Defense (DOD) is a top customer for NOS. Any situation creating problems with deep draft vessels or military operations in general is of national concern. If Mayport, Florida, for example, becomes a homeport for a deep draft nuclear aircraft carrier, hydrographic issues such as clearance, etc., become very important. NOS this past year spent 77 sea days surveying 150 square nautical miles off NE Florida in an effort to locate artificial reef areas off Duval County so they could be re-mapped. The Navy is still not satisfied with the 25 or more permit areas offshore, viewing some of them as potential navigation obstacles.

A major concern of both the Coast Guard and NOS is the permitting of large areas for artificial reef development and the lack of information on the precise location of materials placed in these sites. When clearance in an artificial reef area is less than 66 feet, the entire area on the nautical chart is "blued" out. This means that all depth data for that area are deleted, listing only the authorized minimum clearance assigned to the area by the permit. For example, a permitted site which extends from 7.5 feet to 400 feet would have its minimum authorized clearance listed as 7.5 feet, as occurred off Broward County, until that permit area was subdivided. The blue area of an artificial reef permit area is bordered by a dotted line and the interior is identified as "Obstruction-Fish Haven." Shipping traffic tends to avoid these areas due to the fact that when these coastal fish havens increase in size to dozens of square miles, bottom detail is lost when the area is blued out. In the eyes of the Coast Guard, Navy, and NOS, this loss of hydrographic detail translates to reduction in commerce, navigation, and military operations in the areas affected.

R. Christian noted that the fact of these kinds of problems in nautical mapping associated with artificial reef development is one reason the Joint Committee undertook the exercise to revise the National Plan. It is imperative that there is some interface with the federal agencies to define the roles to avoid conflicts.

Discussion of Artificial Reef Permitting Procedures

Bert Hiemer, Chief of the U.S. Army Corps of Engineers Permits Branch, Jacksonville, gave an overview of the Corps' responsibilities which originally were to minimize impacts to navigation and national security under the authority of the 1899 Rivers and Harbors Act. By 1972, under Section

JOINT ASMFC/GSMFC ARTIFICIAL REEF MEETING

MINUTES

Page -5-

404 of the Clean Water Act, the Corps began dealing increasingly with developmental dredge and fill issues related to wetlands. The Corps is now a premier wetlands protection agency with 10,000 permits a year processed through the Jacksonville District alone. Heimer reported that less attention was focused on their original duties - navigation and national security as a result of this greatly increased wetlands jurisdictional workload. Several problematic reef permits slipped through the cracks and during the past year several steps have been taken to improve interagency communication regarding artificial reefs. They are in the process of responding to a letter sent to their Chief Engineer, Col. Joe Miller, by the FDEP secretary, Virginia Wetherell on 8/18/98, regarding a series of items the Department has requested the Corps to address. The letter states that the Corps has agreed in principle to implement ten specific action items that will address these concerns. They are:

1. Insure that applications for artificial reef permits are properly coordinated through state and federal agencies to insure that any navigation, national security, user conflict, environmental and fishery management issues are identified prior to permit issuance.
2. Generate a public notice mailing list specific to artificial reefs targeting those individuals or agencies which have expressed an interest in or need to receive artificial reef permit applications.
3. Develop a "request for additional information" addendum to be included with the general environmental resource permit and dredge and fill permit application forms to better guide applicants who are applying for an artificial reef permit. This information would be more specific to artificial reef permit projects than the standard information requested in the existing environmental resource permit and dredge and fill permits application forms. The general joint environmental resource and dredge and fill permit application forms would remain unchanged.
4. The National Fishing Enhancement Act of 1984, (Act) Title II of P.L. 98-623, section 205 (c)(2) mentions that a permit holder is liable for failure to follow permit specifications, though no liability coverage standards are provided. The Corps of Engineers should define the issue of liability as relates to the holding of a permit for artificial reef construction by private individuals, clubs, or other non governmental entities, including identification of requirements for insurance and/or bonding of these persons or organizations if they will continue to be eligible to hold artificial reef permits.
5. Noncompliance of the general and special conditions of an artificial reef permit can be problematic. Additions to permit language should be included to describe how noncompliance by a permit holder with the terms and conditions of an artificial reef permit will be resolved.
6. The size of an artificial reef permit would be limited by the ability of the applicant to meet performance-based requirements for pre-deployment bottom surveys and any monitoring required for reauthorization of the proposed permitted site. Consideration would also be

JOINT ASMFC/GSMFC ARTIFICIAL REEF MEETING

MINUTES

Page -6-

given to the maximum amount of material which could reasonably be expected to be placed in the proposed permitted site in a five to ten year period and still allow separation of individual reef sites by several hundred feet.

7. Continue to work with Department staff to make recommendations for types of artificial reef materials appropriate for use. A categorization of reef materials has been developed as a suggested guideline, based upon input from Florida coastal government artificial reef coordinators and managers, communications with Gulf and Atlantic States artificial reef coordinators, direct observation by Department staff, and reef materials guidelines and policy documents developed by the Gulf States and Atlantic States Marine Fisheries Commissions.
8. Require the permit holder (or authorized representative) to have an active role in reef placement, including providing direct oversight of any subcontractor placing reef material on a permitted site.
9. Do not issue artificial reef permits for areas whose boundaries fall within or overlap those of active artificial reef areas permitted to other parties or areas where other forms of permitted activities have been authorized, i.e. navigational channels, anchorages, or commercial trawling grounds.
10. Do not allow an artificial reef permit to be re-authorized for an additional five year period without some type of assessment of the materials deployed to confirm condition, location, and verification that the permit holder has been consistent with the permit requirements.

It was pointed out that different Corps districts deal with artificial reefs in different fashions. For example, last year the Mobile Corps district increased Alabama's large areas to over 1200 square nautical miles, overriding the recommendation of the 8th District Coast Guard and the Minerals Management Service not to proceed with a further large area extension. The Jacksonville District, on the other hand, has concerns about the proliferation of large areas for artificial reefs. A general permit for an artificial reef area in Texas does not mean the same thing as an SAJ-50 general artificial reef permit in Florida.

The GSMFC is looking into the possibility of arranging a meeting of representatives from Corps District offices in the Gulf of Mexico region to better understand the similarities and differences in how the various Corps districts operate with regard to artificial reefs. The ASMFC reef committee is considering a similar approach for the east coast though there are ten east coast Corps districts.

Status of National Artificial Reef Plan Draft

B. Price updated the committees on the status of the National Plan revision. About a year and a half ago the Atlantic and Gulf Commissions wrote a letter to National Marine Fisheries Service asking if they could take on the job of revising the National Artificial Reef Plan. The National Artificial Reef Plan came about in 1985 with the passage in 1984 of the Fisheries Enhancement Act. The

Fisheries Enhancement Act required the Secretary of Commerce to produce an artificial reef plan. The Plan, written in 1985, used the best information available at that time. In the last 13 years there has a great deal of change, with a significant number of the artificial reefs being placed since the publication of the Plan. The Plan was due to be revised, and when the Commissions expressed an interest in it some funding was made available to hold a series of meetings to determine how to revise the Plan. The original assessment was it would take about one year. It has not been submitted to NMFS as of the current meeting. In the next couple of months the three Commissions, speaking for the states, will submit their recommended changes. Under the statutory requirements of the Act, the states cannot write the National Plan, and the federal government will ultimately be the author of the finalized National Plan. Lukens mentioned that one of the weaknesses in the draft as it currently stands is that the federal roles are not very well defined. Significant additional language is expected from federal agencies such as NOS, Coast Guard, and possibly the Navy. The review process is expected to take 12-18 months. Eventually a draft will be published in the *Federal Register* and there will be a public comment/review period.

The meeting recessed at 11:50 am and reconvened at 9:00 am Wednesday morning.

Discussion of Permitting Procedures/National Issues

Commander John Little, U.S. Coast Guard Headquarters, Washington, DC emphasized the Coast Guard's interest in continuing to promote dialog among all the multiple interests and groups that are interested in artificial reefs and to the extent possible, insure all interests are heard and carefully evaluated. He recognized that continuity of communication was tough in some of the Coast Guard Marine Safety Offices and Aids to Navigation Offices because of personnel coming and going every seven years. He felt that with regard to artificial reef permits, the local Marine Safety Offices and Captains of the Ports should have opportunities to comment on artificial reef permits affecting their areas of jurisdiction. They are concerned that when a permit is issued for an artificial reef area, if it does not go out for interagency review, the Coast Guard never finds out about it.

The Coast Guard's mission is to insure safe and effective use of U.S. waters. Water transportation is still the most widely used means of shipping goods. Insuring the navigational safety of waterborne commerce and helping to maintain national security are top Coast Guard priorities. The Coast Guard establishes safety fairways and safety zones, establishes and maintains aids to navigation, enforces fishing laws in federal waters, and monitors and enforces environmental regulations, among other duties (search and rescue, etc.). The Coast Guard does not want to see artificial reefs become navigational hazards or Department of Defense concerns, as a result of improper placement, inaccurately reported reef positions, and/or movement of reef material. The Coast Guard and NOS are adamant about the use of accurate differential GPS descriptions of reef permit areas, as well as the accurate reporting of material deployed. Little also stated that it is very important that reef users, applicants, and reef managers be keenly aware of multiple use conflicts, especially as it relates to navigation issues.

JOINT ASMF/MFC/GSMFC ARTIFICIAL REEF MEETING

MINUTES

Page -8-

J. Dodrill provided an historical overview of large artificial reef areas in the Florida Panhandle. Coastal Reef Builders Inc., a private company which manufactures and deploys reef balls, briefly explained their interest in securing 113 square miles in state and federal waters for deployment of reef balls off Pensacola, Florida. The application is now about 18 months old and no decision has been made by either the Corps or FDEP. The issue of for-profit placement by a private individual of materials on sovereign submerged lands for purposes of exclusive use by other individuals is a proprietary issue which may ultimately be addressed by the Governor and Cabinet and in a policy statement by FDEP. A representative from Rhode Island expressed concern about the type of Public Trust Doctrine precedent this will set if the Public Trust Doctrine is compatible with the fact that the reported locations of these materials will be intentionally inaccurate in order to protect the secrecy of the site and the investment of the client.

Todd Barber of Reef Ball Development Group pointed out that one of the purposes of this application is to serve as a test case. Another is to legitimize an activity that has been occurring illegally and better control it through the use of acceptable materials. The current presence of over 100 square miles of artificial reef areas in federal waters off Escambia County alone and another 350 square miles elsewhere in the Panhandle does not appear to have eliminated illegal reef deployments, based upon anecdotal observations.

The National Ocean Survey and the Coast Guard both reiterated their concerns about loss of much navigational chart information due to the "bluing out" of identified fish havens and the avoidance of such large areas by maritime commerce. Reef Ball Development Group pointed out with low profile prefabricated materials, 6 feet maximum, that it would not appear to be necessary to blue out the whole area and eliminate depth contours. NOS countered that such a bluing out procedure was a charting protocol that was not expected to change. All the regulatory agencies expressed concern about the absence of verifiable reef location information in large areas involving private deployments.

NOS pointed out that once a "Fish Haven" was charted and material was deployed on that site, it remained charted and would not be removed regardless of whether the site became inactive. The site could be made larger, but not smaller.

General concerns about conversion of site locations from LORAN to latitude/longitude were voiced by NOS. Once again, the importance of moving to differential GPS in reef siting was emphasized. Several states have realized that their permitted sites, originally charted using LORAN, may have boundaries that are hundreds of feet or more from where latitude/longitude conversions report them to be.

GSMFC Sponsored Research Publication

Lukens reminded the committees of the previous discussion regarding the publication of state project reports. The name of the publication is proposed to be "*Reef Monitoring Studies of the Gulf and Atlantic States.*" The objective is to publish scientifically collected and analyzed information on the

JOINT ASMFC/GSMFC ARTIFICIAL REEF MEETING

MINUTES

Page -9-

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 management of reef resources. The publication would include studies either conducted or contracted by state agencies that have not been otherwise published in scientific journals.

Lukens added that at this time he has only received two reports and did not plan to publish until four or five reports have been received. Lukens expressed concerns that there is not enough actual research being done in the state programs which is not being published elsewhere. The conclusion is this activity may not work; however, Lukens said he will see how things proceed in the next few months.

EPA/NAVSEA/MARAD Activity Involving Use of Ships as Reef Material

Bell reported that there is once again some interest within the Navy in providing ships to states for artificial reefs. Previous efforts did not work out because of EPA concerns, primarily about PCBs. The EPA continues to have concerns. He expects to have updated information in the near future.

Bell also spoke with an individual with a company who is working for NAVSEA. It was in reference to the 3 million dollar project that the Navy funded to examine the PCB effects of sinking ships. This company used the funds to examine deep water sinkings, because it is the Navy's priority in evaluating the SINK EX program. A number of ships have been sunk over the years in deep water, and they want to know what effect the program is having in terms of PCBs leaching out and getting into the sediment or into organisms. They found one ship off of California that sank in about 5,000 feet of water, and they have collected some data from that site. He indicated that he believes that things are changing within the Navy, with interest in disposal of ships in shallow water. That of course would mean involving the state programs.

Bell has collected data from studies on ships that were sunk off South Carolina which are known to have had PCBs onboard. Bell's work, which was limited, indicated no bioaccumulation or any problems in any of the organisms which were sampled at the ships. Sediments were not examined.

National Artificial Reef Database

Due to the success and interest of the Gulf database, Christian mentioned that the Atlantic has decided to move forward with a similar database. It is hoped to have something to merge by time of the next meeting. D. Bedford mentioned that he has some information from the Pacific that could possibly be incorporated.

Marine Reserves and Why We Should be Interested in Them

The topic of marine reserves was briefly discussed. DeWitt Myatt from Maryland reported on the increasing interest among recreational fishermen for marine reserves and is beginning to collect some data on the issue. An announcement was made that the Mote Marine Lab in Sarasota, Florida, was hosting a meeting on Essential Fish Habitat and Marine Reserves on November 4-6. South Carolina reported support from the local fishing groups to proceed with an experimental artificial reef project to study a couple hundred artificial reef modules placed as a no take area for a period of three years, in order to evaluate the feasibility of artificial reef use as marine reserves. Artificial reef modules are currently in use in the Oculina Banks experimental area off the Florida east coast. This four mile wide and 23 mile long zone is currently closed to anchoring, trawling, and bottom fishing and is classified as a Habitat Area of Particular Concern. Difficulty enforcing bottom fishing restrictions in such a narrow zone, and no restrictions against trolling in the area make it difficult for enforcement officers to sort out legal and illegal fishing methods.

If some natural hard bottom habitat was eventually moved into no take zone status, it was suggested that there might be a role for artificial reefs to mitigate the loss of public access to this natural bottom. Also, to create a reserve in an area where there was no bottom fishing taking place initially and enhance the area with artificial reef materials while keeping it a no take zone was also suggested as a means by which fishermen would be less impacted.

Future Meetings

Emerging issues to be discussed at future meetings included:

- 1) Define federal roles.
- 2) What to do about the issues of appropriate consistency of permitting processes.

It was stressed that everyone needs to think about emerging issues and be prepared to bring these issues before the Joint Committee.

Lukens reported that he has made provisions to hold a joint workshop in Key West, Florida in November 1999. The main issue to be discussed at the workshop is progress with the National Plan revision.

Presentation by Artificial Reefs Incorporated of Gulf Breeze, Florida

John Kraft, ARI Director of Marketing, and Scott Bartkowski, company President, gave an overview of their concrete prefabricated reef product, the "Fish Haven". The Fish Haven is a hollow concrete triangular base structure composed of 3000 psi concrete 2.5" thick, 9 feet on a side along the base and six feet tall with five triangular holes in each of the sides and a hole in the top. Smaller size modules of similar design are also available. Bartkowski showed a video of prototype structures placed in 73 feet of water off Pensacola, Florida, with pre- and post-Hurricane Earl and post-

JOINT ASMFC/GSMFC ARTIFICIAL REEF MEETING
MINUTES

Page -11-

Hurricane Georges footage, showing red snapper, amberjack, grey snapper, lane snapper, and trigger fish activity and no visible movement or structural damage. The company, based in west Florida, is bonded and provides individual placement of modules using crane deployment as well as providing a range of other services, including basic monitoring and assistance with site selection. The phone number is (850) 934-7201 and mailing address: 6536 East Bay Boulevard, Gulf Breeze, Florida 32561.

Other Business

L. Dauterive from Minerals Management Service briefly mentioned the technology of side scan sonar. Dauterive suggested that, based on the presentation of side scan sonar technology to the Gulf Subcommittee from Florida State University, that the various states take a serious look in the near future of this technology and how it could be useful to identify those sites in question. It particularly needs to be addressed in regards of the previous discussions with the Corps, NOS, and the Coast Guard.

There being no further business, the meeting adjourned at 4:00 pm.

RecFIN(SE) Biological/Environmental Work Group
Meeting Summary
November 10, 1998

The meeting convened at 8:45 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
Christine Johnson, MDMR, Biloxi, MS
Bryan Stone, SCDNR, Charleston, SC

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, begin discussing the development of marine recreational fishery surveys methodologies for collection of data in Puerto Rico and U.S. Virgin Islands; review of compilation of metadata related to changes in fishing regulations; develop criteria for defining private access sites, compile potential sources of information, and develop plan of compiling this information; and determine magnitude of night fishing activities by state and develop recommendations by state, by mode.

Development of marine recreational fishery surveys methodologies for the Caribbean

D. Donaldson stated that due to the cancellation of the meeting in Puerto Rico, this item cannot be thoroughly discussed since there is no Caribbean representation. 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. The group did not decide on the best method for collecting effort data, however, it is probably premature for selection of a methods. The group decided that the first step should be the compilation of fishing site information in Puerto Rico and the U.S. Virgin Islands. **The Work Group recommended that RecFIN(SE) begin a program to compile a register which contains information about fishing sites in the Caribbean, based on the availability of funds.** The site register should contain the information currently being collected for the MRFSS as well as accessibility of the site. After the site register information has been compiled, the group will begin evaluating the various methods (roving count, aerial, etc.) for estimating effort in the Caribbean. Staff will check with Puerto Rico and the U.S. Virgin Islands about these issues and plan a meeting with the Work Group and Caribbean personnel to begin addressing these issues.

Review of the QA/QC document - log books

The group reviewed the log book section developed by J. Brust. The revised section (attached) represents the administrative record of this portion of the meeting.

Review of compilation of metadata related to changes in fishing regulations

D. Donaldson stated that the group has been compiling metadata for some time. However, due to the complexity of this information and a well-defined criteria for compilation, the collection of the metadata was put on hold. The Committee recently readdressed the issue and tasked the Work Group with compiling information about changes to fishing regulations. Staff began compiling this information from law summary documents developed by the GSMFC Law Enforcement Committee. The group believes that it would be redundant for the RecFIN(SE) Committee to compile these data when another group is already collecting it. However, this information is just for the Gulf of Mexico region. In an effort to begin compiling these data region-wide, **the Work Group recommended that the ASMFC Law Enforcement Committee consider developing a document similar to the GSMFC law summary.** The next step in this process will be to get the data into a data base. The ACCSP is currently developing a data management and it was suggested that a metadata module be developed for entering these data. **The Work Group recommended that the ACCSP Operations Committee consider the development of a metadata module as the next component of the ACCSP data management system.** The data management group could use the GSMFC law summary as a template for the types of data that would need to be entering into the data base. The group discussed the time period that this information should be compiled. It was decided that the data will be collected on an annual basis starting from the current year. The information from previous years will be compiled on a schedule that will be determined at a later date. The last issue discussed by the group was the possibility of providing the metadata information on the Internet. This would allow real-time access to fisheries managers and law enforcement personnel for their use. This idea will be explored further by the Committee.

Discussion of Private Access Issues

D. Donaldson stated that the group has been charged with developing criteria for defining private access sites, compiling potential sources of information, and developing a plan of compiling this information. The group decided that the first item that needed to be addressed was the development of a definition. After some discussion, the group decided that a private-access site is any site where the public does not regularly have access including privately-owned shoreline, waterfront residences, waterfront communities, private marinas, and business-owned shoreline. The group then discussed how to begin collecting information about private access sites. It was noted that Texas and North Carolina have done some work in this area and it might be useful to get this information. M. Osborn suggested that the Committee utilize the Texas inventory of private access site as a template for the type of information that needs to be collected. D. Donaldson stated that he would contact P. Campbell to get a copy of this report. Using the Texas report as a template, the group suggested that each participant begin compiling private access site information for their area. **After some discussion, the group modified their recommendation and recommended that the RecFIN(SE) Committee identify three areas in the Southeast Region and begin compiling private access site information for these areas.**

Night Fishing Activities

D. Donaldson stated that the Work Group was charged with determining the magnitude of night fishing activities by state and developing recommendations by state, by mode for night fishing activities. D. Donaldson presented night fishing information compiled from the MRFSS telephone data. The group reviewed that information and determined that the night fishing occurred most

frequently in the shore mode and was most prevalent during waves 4 -6. 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. This particular study needs to focus on finfish only. If states are interested in night fishing activities regarding shellfish, special studies need to be developed. Once areas of significant night fishing have been identified, pilot studies need to be implemented to collect data about night fishing. The group suggested that the pilot survey could be conducted in the Gulf of Mexico and North Carolina.

Being no further business, the meeting was adjourned at 12:00 noon.

QA/QC FOR LOGBOOKS, ANGLER DIARIES, AND CATCH CARDS

Logbooks, angler diaries, and catch cards are typically offsite survey methods; that is, they are not administered at the fishing site by a survey representative like intercept surveys are. These methods are useful for collecting catch, effort, and often socioeconomic data. If reporting is made mandatory, it is possible to obtain total catch or effort information. More commonly, however, these methods rely on voluntary reporting. For this reason, logbooks, diaries, and catch cards are typically used to make comparisons or to track trends over time, as opposed to estimating population parameters.

Logbooks, diaries, and catch cards are inexpensive and are relatively simple to administer, compared to other off site methods. They are useful for collecting information from fisheries with high levels of effort such as tournaments and head boats, or where fishing effort is low or the survey area is too large or remote to be covered by on site survey methods. One major drawback to these methods is that the data are self reported and are therefore often biased.

Survey Procedures

There are two general formats for respondents to record and report their own data. These are single-angler trip and multi-angler trip records. The method chosen should be reflective of the type of fishery and the types and amounts of data to be collected.

Single-Angler Trip Reporting

Catch cards are used most often to collect data on trips taken on a single day. These are used if effort of each angler is low, or if data collection is only conducted for a short period. Each angler is given a catch card at the beginning of the trip and is instructed to place it in a collection box or mail it in at the end of the trip.

Multi-Angler Trip Reporting

Logbooks and diaries can be used to collect information about multiple angler trips over an extended period of time or when effort is high. These methods are often used during tournaments or with head boat trips. Logbooks can be assigned to individual anglers, vessels, or tournament directors and can be used to collect data on individual anglers, or for a fishing party or vessel collectively. Logbooks and diaries are returned to the survey agency at the end of the survey period.

Participation

Logbooks, diaries, and catch cards typically rely on voluntary reporting of data by the respondents. Consequently, participation may be low if the respondents view the reporting procedure as a burden. The survey should be developed to place the least amount of burden on the respondents, even if participation is mandatory. This can be done in several ways, including facilitating distribution and retrieval of reporting documents, and using carefully developed reporting forms that are easy to understand and fill out.

Reporting documents should be distributed with the least amount of burden to the respondents. Reporting materials should be taken to the respondents; the respondents should not have to come to the reporting form. For example, forms may be handed out at access sites to the survey area, distributed at angler group meetings, mailed to anglers or vessel captains listed on an angler or captain registry, or distributed during license renewal. Forms distributed in these ways will result in more survey participation than requesting respondents to come to the office of the survey agency to pick up reporting materials.

The form distribution method used will depend on the objectives of the survey. Surveys targeting a certain fishing area should consider distributing forms at access sites, while surveys covering a broader area can be distributed by mail, at meetings, or during license renewal. Surveys targeting a particular species could distribute forms at meetings of fishing groups dedicated to that species.

Reporting materials should also be easy to re-submit to the survey agency. It is recommended that a survey agent be sent into the field to collect completed forms in person. Face to face interactions and direct contact between the survey agency and the respondents will increase participation. Respondents realize they are cooperating with people, as opposed to "The Agency." In addition, it gives the field agent a chance to scan the data forms quickly and ask any questions about missing or confusing data in person, as opposed to on the phone. Other methods of data form retrieval could also be used which may be less labor intensive, but not as beneficial to the survey. Collection boxes placed in easily accessible sites could be used to collect catch cards. Reporting forms could also be postage paid and preprinted with the survey agency address for simple mail delivery. Logbooks and diaries should have some form of sealing so that pages are not torn or lost. Sealed logbooks and diaries, and folded and sealed catch cards are also beneficial if reported data includes economic information.

Survey participation will also be increased if the respondents are rewarded in some way for their efforts. One simple way of rewarding respondents is to return their reporting forms to them after the data have been entered. It might also be possible to send summarized results of the survey to all participants. Several agencies have conducted lotteries at the end of the survey period by randomly drawing a number of completed reporting forms from all forms that were submitted. If these incentives are announced during reporting form distribution or printed on the forms themselves, respondents may be motivated to respond so that they may learn the outcome of the survey. Incentive awards, such as prizes for the most fish or the highest catch per effort are not encouraged since they may lead to increased bias.

Form Design

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), and be present while they complete the form. This will allow the agent to identify any problems the respondents have, and make changes to the reporting form accordingly.

The design and layout of the reporting form and the type of questions that are asked will depend on the type of reporting form to be used and the types of data to be collected. However, all survey

forms should request name and contact information for each respondent so that any inconsistencies or other questions with the data can be clarified with the respondent.

Agencies should consider several aspects of the reporting form design that will allow for accurate and consistent data collection from all anglers. Although each agency should instruct the respondents how to fill out the forms, properly designed forms will allow the collection of more consistent and reliable data. Issues that should be considered include the form layout and order of questions, the specific wording of the questions, and the use of precoded or preprinted forms.

Data forms should be straight forward and easy to use, and have a logical "hierarchical" layout. 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 questions should be large enough to 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.

Whenever possible, the survey form should have as much information already filled in before being distributed to the respondents. For example, if data is being collected at the species level (e.g. number of each species caught), it would be beneficial to list the most frequently caught species on the form. This will save time for the respondents, and they will be more likely to respond. Using multiple choice format or check boxes will also reduce respondent burden, and also decrease legibility problems.

Validation

Validation is a means to determine the accuracy of the survey results using alternative survey methodology, such as telephone or intercept surveys. A separate survey will give a second set of survey results which can be compared with results from the initial survey. A separate survey to validate the results of the initial survey should be conducted concurrent to the initial survey. The second survey does not need to be as extensive as the initial survey, but should be large enough to account for variability and get an accurate picture of the fishery. The type of survey used may depend on the question at hand. For example, a telephone survey would be useful to get a second estimate of total effort and may identify non-response bias or missing data from the initial survey. A telephone survey would not be as useful to estimate catch, but an intercept survey could be used. Intercept surveys would also be useful to validate that reported species identifications are accurate.

Data Management

Before the data are used to develop survey estimates and results, they should go through a series of verification and editing procedures. This will ensure that the survey results are as accurate as possible. Protocols should be established for verifying and editing data. Several possible verification and editing techniques are described in the following sections.

Bias and verification

Survey results are only as accurate as the data that is collected. If the data that is submitted is incomplete or biased, then the survey results will not accurately reflect what is really happening. This is especially true of data reported by the fishermen and not collected by trained agents. Data collected during the survey should therefore be verified for accuracy and completeness. Proper outreach and education programs will be useful to reduce the amount of reporting errors, but data verification procedures should also be developed to estimate the types and amount of these errors.

There are several types of bias associated with self reported data. Some of these will tend to overestimate survey results while others will lead to underestimates. Two of the most common biases are prestige bias and non-response bias. Prestige bias results from anglers exaggerating their catch or number of trips. Non-response bias occurs typically when respondents do not report trips where few or no fish were caught. Both prestige bias and non-response bias will lead to overestimates of catch and catch per effort. Conversely, bag limits and quotas may cause respondents to not report some of their catch, and may therefore underestimate catch and catch per effort.

Bias can also result if the respondents are not representative of the entire fishing community. For example, angler groups tend to be made up of anglers who fish more often than non-members, and may be more efficient anglers than non-members. If angler groups are targeted for the survey, results will be higher than if a random sample of anglers was used.

The types and amounts of bias should be carefully considered when performing a survey using self reported data. Proper survey methodology will reduce the amount of bias, but data verification procedures should be implemented to detect and correct for any unknown biases. Estimates of the effect of bias on survey results should always be included when reporting on the results of the survey.

Many of the problems associated with survey bias can be identified through verification procedures. Verification involves recontacting respondents to verify that their forms were completed correctly and accurately. The most common method of verifying data is through call back procedures. This involves contacting a number of the respondents by telephone and interviewing them about their survey responses. By recontacting respondents, it is possible to identify whether the number of trips and number of fish caught was accurately reported, and check dates, times, and areas fished.

Recontacts should be done soon after the form is received so that recall bias (errors made by the respondent not remembering what happened) is reduced. Contacts should be made throughout the survey on a regular (i.e. weekly or monthly) basis. A minimum percentage or number of recontacts should be established for each period. Any questions with the respondents data (i.e legibility problems) should also be clarified during these phone calls. However, recontacts should be made on a random sample of respondents, not just those with problems with their reporting forms.

Data Form Review

Before the data is computerized, the data forms should be quickly scanned visually for accuracy and consistency. Forms should be checked for items such as, but not limited to the following.

- legibility
- reasonable dates and times
- species characteristics (reasonable lengths, weights, and area caught)
- all necessary fields filled in
- cross checks between data fields

When an error is encountered or the data is illegible, the respondent who reported the data should be contacted, if possible, to clarify the response. This could be done in conjunction with call back verification procedures. Protocols should be established for the proper procedure for changing an incorrect field. For example, it is recommended that any changes to the data are documented, including why it was changed, the original entry, the new entry, and who made the change. If the survey is being conducted over a long period, anglers could be informed of their reporting mistakes to minimize similar mistakes in the future.

Data Entry

Once the data have been reviewed, they should be entered into a computer database. Data entry clerks should be screened for qualifications and training to ensure accurate data entry. Data entry procedures should have protocols to decrease the number of transcription errors that are made. A maximum acceptable error rate, such as less than 0.5% of all entries, should be established and adhered to. Data entry procedures must be designed to achieve this level of accuracy. This can be achieved using a double entry system (each entry is entered twice and not accepted unless both entries are identical). Other systems may also be used if they meet or do not exceed the recommended maximum error rate. Computer scanning and other technologies may decrease the amount of data entry errors.

It is recommended that 5-10% of all entries undergo a spot check in a regular basis, if the survey is conducted over a long period, or at the end of the survey if it is a short term survey. The review should be performed by someone other than the person who entered it. The percentage of entries that are spot checked might be increased if the error rate is found to be greater than the maximum error rate. It is also recommended that a portion of each individuals work be checked for errors when new data entry clerks are used. Protocol should be established on who performs the review, how it is performed, and how often it is performed.

Computer Audit

Even after the data have been spot checked, it may be necessary to run further data editing programs for errors that are not obvious, including, but not limited to, the following.

- Species ranges, lengths, and weights
- Dates
- Invalid codes

- Outliers
- Blank fields
- Cross checks between fields

These data checks can be conducted with a computer audit. A computer audit is a computer program or series of programs that checks for errors and “flags” entries that are potentially incorrect. It is possible to incorporate some of these programs into the data entry system, so that they are recognized, checked, and changed if necessary before reaching the database. Entries that are flagged should always be checked against the original data sheets, and if possible, checked with the respondent to check for accuracy before any changes are made. If it is necessary to make a change to the database, protocol should be established for how and where to document the changes. Authorization to make changes to the database should be restricted to as few employees as possible.

APPROVED BY:

Paul Watson
COMMITTEE CHAIRMAN

**COMMERCIAL FISHERIES INFORMATION NETWORK (ComFIN)
MINUTES**

Tampa, Florida

Thursday, November 12, 1998 and Friday, November 13, 1998

Chairman, Joe Moran, called the meeting to order at 3:00p.m. The following members, staff, and others were present:

Members

Page Campbell, TPWD, Rockport, TX
Christine Johnson, (proxy for T. Van Devender), MDMR, Biloxi, MS
Michelle Kasprzak, (proxy for J. Shepard), LDWF, Baton Rouge, LA
Lisa Kline, ASMFC, Washington, DC
Wilson Laney, USFWS, Raleigh, NC
Skip Lazauski, AMRD, Gulf Shores, AL
Craig Lilyestrom, (proxy for D. Matos), PRDNER, San Juan, PR
Ron Lukens, GSMFC, Ocean Springs, MS
Joe Moran, SCDNR, Charleston, SC
Joe O'Hop, FDEP, St. Petersburg, FL
John Poffenberger, NMFS, Miami, FL
Tom Schmidt, NPS, Homestead, FL
Carter Watterson, (proxy for D. Lupton), NCDMF, Morehead City, NC

Others

Steve Brown, FDEP, St. Petersburg, FL
Cynthia Pierce, NMFS, St. Petersburg, FL
Mark Alexander, CTDEP, Old Lyme, CT

Staff

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

Approval of Agenda

The agenda was approved as written.

Approval of Minutes

The minutes of the meeting held on February 23, 1998 in Orlando, Florida were approved as written.

Review of List of Personnel with Access to Confidential Data

J. Poffenberger reviewed the list of personnel with access to confidential data and asked that Committee members report any changes to him or C. Lavarini.

Review and Discussion of Port Samplers Meeting Proceedings

D. Donaldson reported on the Port Samplers meeting which was held in Tampa, Florida in July 1998. Approximately 30 people attended this meeting, including state and federal port samplers from Florida, Alabama, Mississippi, Louisiana, and South Carolina, NMFS personnel, GSMFC personnel and members of the ComFIN Committee. Each sampler reported on the geographic area they cover, types of fishermen or dealers sampled, and a brief description of their sampling procedures. Sampling protocols and guidelines were reviewed with several suggestions and recommendations being made.

As a result of this meeting the following has been decided:

- J. Moran will send staff a copy of presentation to ACCSP Law Enforcement Committee on measurement of different species
- D. Donaldson will attend a future meeting of the ACCSP Standard Codes Committee in an effort to standardize measurement issues
- D. Donaldson will check on status of recommendations made at port samplers meeting
- Staff will send copy of Port Sampler Meeting Minutes to Louisiana and Texas samplers to facilitate future meeting of samplers from all Gulf states and Caribbean
- Suggested topics for next samplers meeting include, Jack identification workshop, overview of ComFIN program, trip ticket information, regulations, ways to build better rapport with dealers, sampling and sub-sampling techniques
- Staff will work out details for future samplers meeting
- J. Poffenberger will work on developing a manual for sampling techniques
- Recommend to the FIN Committee that measurement for whole finfish be fork length

Work Group Reports

Recommendations Work Group - D. Donaldson distributed copies of the ComFIN Recommendations Document which was developed at the Recommendation Work Group meeting held in Atlanta, Georgia in August 1998. These recommendations and tasks will serve as a guide for the Committee. The Committee reviewed the Recommendations Document making some

changes. The revised document represents the administrative record for this portion of the meeting. The actions presented in the Work Group report were accepted and approved by the Committee.

During Committee discussion on the Recommendations Document, J. Poffenberger expressed concern that currently there is no process for establishing funding priorities and not all partners have had the opportunity to be involved in recent decisions on allocation of funds. R. Lukens noted that it was only recently that operational funds had become available for the Gulf and no decisions had been made. Lukens also noted that senior level decisions are made during the GSMFC State-Federal Fisheries Management Committee (S-FFMC) meetings. Membership on the S-FFMC includes representatives from each of the five Gulf states, NMFS, U.S. Fish and Wildlife Service (USFWS), and the GSMFC as a non-voting member. The Committee decided to further explore this issue under other business.

Data Collection Work Group - D. Donaldson reported that the Data Collection Work Group met in Atlanta, Georgia in August 1998 to review the trip ticket module. The Work Group made several modifications and revisions to the trip ticket program, including the areas of discards and protected species, and data elements. In the course of Committee discussion, L. Kline suggested that the ComFIN Committee be represented at the ACCSP Biological Review Panel meeting. D. Donaldson will attend until such time as a volunteer comes forth. The subject of dealer codes was addressed and the Work Group agreed that the states need to provide dealer code updates to the NMFS on a monthly basis. J. Poffenberger will notify the states when dealer license codes are set up. Water body codes were discussed by the Work Group and J. Poffenberger distributed lists of water body codes to the Committee. M. Kasprzak noted that J. Shepard had requested expanding existing water body codes for the Gulf. D. Donaldson asked Gulf states Committee members to review the codes and return corrections to him as soon as possible since it was agreed that Donaldson will attend the ACCSP Standard Codes meeting scheduled for January 1999. The actions presented in the Work Group report were accepted and approved by the Committee.

Data Collection Procedures Work Group - D. Donaldson reported that this Work Group was charged with the development of a document which outlines the procedures for the collection of data under the ComFIN. The draft document was edited by the Work Group and the revised version was distributed to Committee members. Donaldson noted that this is a dynamic document and will

undergo further revision and modification as the program develops. The actions presented in the Work Group report were accepted and approved by the Committee.

Social/Economic Work Group - D. Donaldson reported that the Social/Economic Work Group met in Tampa, Florida in July 1998 and addressed several issues. Identification of minimum data elements for the social and economic aspects of fisheries management, expanding the QA/QC document to include social and economic data, and the market and social/economic modules for ComFIN. The results of the discussion of the Work Group were presented to and accepted by the Committee. Committee members discussed the lack of representation on the Work Group of members from the South Atlantic. Since T. Brainerd, a sociologist, is no longer a member of this Committee, J. Moran suggested finding a replacement with similar interests.

Discussion of GSMFC Data Confidentiality MOA

R. Lukens reported that all partners have now become signatories of the Data Confidentiality Memorandum of Agreement (MOA). J. Poffenberger will request that any personnel in the Gulf states who have signed non-disclosure forms be given access to data online. This should be available within one month. Lukens noted that a similar agreement is being discussed for the Atlantic states.

Election of Officers

The following officers were elected by rotation: Daniel Matos of Puerto Rico, Chairman, and Tom Van Devender of Mississippi, Vice-Chairman.

Other Business

Cynthia Pierce, of the National Marine Fisheries Service (NMFS) Grants Management Office in St. Petersburg, Florida reviewed the grants management process for Committee members. The National Oceanographic and Atmospheric Administration (NOAA) Grants home page was explained and it was noted that all forms are now available online.

M. Kasprzak requested that this Committee write a letter of endorsement to J. Roussel supporting Louisiana's efforts in the development of a trip ticket program. D. Donaldson will draft a letter for the Chairman's signature.

The Committee further discussed funding issues. Currently there is no formal budget process for the allocation of funds since until now, there has been no money appropriated for operational activities. After lengthy Committee discussion, **R. Lukens moved to have a standing agenda item**

for FIN Committee meetings to discuss funding for FIN activities. The motion was seconded and passed unanimously. On a related matter, in order to facilitate the exchange of information among all partners, R. Lukens will suggest inviting A. Kemmerer of the NMFS to the GSMFC State Directors' Meeting scheduled for December 1998, and to continue reporting any decisions made by this Committee to the GSMFC S-FFMC which meets in March and October of every year.

L. Kline suggested, when considering budgetary items, to include software for partners when building a data management system. Kline noted that in the ACCSP agreement with I.C.F. Kaiser, Kaiser purchased the server and they are currently building the database, but the decision on the location of the server has not yet been made. R. Lukens noted that the Gulf members want the GSMFC office to be the regional data center for the Gulf of Mexico and to house the data at the GSMFC office.

There being no further business, the meeting was adjourned at 11:50 am.

**FISHERIES INFORMATION NETWORK
MINUTES**

Thursday, November 12, 1998

Tampa, Florida

Chairman Joe Moran called the meeting to order at 8:30 a.m. The following members, staff, and others were present:

Members

Page Campbell, TPWD, Rockport, TX
Bob Dixon, NMFS, Beaufort, NC
Stephen Holiman, NMFS, St. Petersburg, FL
Christine Johnson, (proxy for T. VanDevender), MDMR, Biloxi, MS
Michelle Kasprzak, (proxy for J. Shepard), LDWF, Baton Rouge, LA
Lisa Kline, ASMFC, Washington, DC
Wilson Laney, USFWS, Raleigh, NC
Skip Lazauski, AMRD, Gulf Shores, AL
Craig Lilyestrom, PRDNER, San Juan, PR
Ron Lukens, GSMFC, Ocean Springs, MS
Joe Moran, SCDNR, Charleston, SC
Joe O'Hop, FDEP, St. Petersburg, FL
Maury Osborn, NMFS, Silver Spring, MD
John Poffenberger, NMFS, Miami, FL
Bryan Stone, SCDNR, Charleston, SC
Tom Schmidt, USNPS, Homestead, FL
Carter Watterson, (proxy for D. Mumford), NCDMF, Morehead City, NC

Others

Mark Alexander, CDEP, Old Lyme, CT
Kevin Anson, AMRD, Gulf Shores, AL
Bruce Joule, MDMR, West Boothbay Harbor, ME

Staff

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

Adoption of Agenda

The agenda was adopted with minor changes.

Approval of Minutes

The minutes from the Fisheries Information Network (FIN) meeting held on February 24, 1998 in Orlando, Florida were approved as written.

Operations Plan

D. Donaldson reported to the Committee on the status of the activities for the past year and plans for 1999. At the last meeting it was decided to merge the RecFIN and ComFIN Operations Plans into one Fisheries Information Network (FIN) Operations Plan. Donaldson reviewed the tasks and their status with Committee members and noted that all the identified tasks have been addressed; some tasks have been completed and others are in the process of completion or are ongoing. (See attached list) The new combined Operations Plan has been organized by goals and objectives with both recreational and commercial components.

M. Osborn noted that D. Schaefer of National Marine Fisheries Service (NMFS) had requested that the term *released* be added to the definition of *discards*. **R. Lukens moved to adopt the language developed by the ACCSP. The motion was seconded and passed unanimously.** The definition reads as follows: *Discards are that portion of the catch that is not retained, i.e. discarded or released at sea dead or alive. Protected species interactions include any interactions as defined by state and federal statutes.* (Footnoted with state and federal statutes)

Under Task 15 of the Operations Plan, S. Lazauski will give a presentation on the Alabama Inshore Creel Survey at the Spring, 1999 meeting. Under Task 24 L. Green will report on Scriptwriters at the Spring 1999 meeting. In the future, the term *non-hook-and-line* will be changed to *non-rod-and-reel*.

After reviewing the Operations Plan, the Committee agreed that each task will be identified as either RecFIN, ComFIN, or FIN. D. Donaldson will make the recommended changes and modifications to the 1999 Operations Plan and copies the modified plan will be sent to Committee members. **W. Laney moved to approve the 1999 Operations Plan as amended. The motion was seconded and passed unanimously.**

Discussion of Establishing Senior-level Policy Board for FIN

R. Lukens noted that there have been some comparisons made between the structure of the Atlantic Coastal Cooperative Statistics Program (ACCSP) and the FIN. The ACCSP has the Coordinating Council and the FIN has the Gulf States Marine Fisheries Commission (GSMFC) State-Federal Fisheries Management Committee (S-FFMC). The S-FFMC membership is composed of the State Directors from each of Gulf states, the U.S. Fish and Wildlife Service (USFWS), the NMFS, and the GSMFC Executive Director who is currently Chairman and a non-

voting member. Lukens noted that there is no representation to the S-FFMC from the South Atlantic states and the Caribbean. After lengthy discussion by the members of the Committee comparing the differences in numbers and other contrasts in the two bodies, it was agreed that although there are some differences in these two administrative groups, they both work effectively and the FIN should remain as it is at this time.

Development of a Data Collection Plan

R. Lukens reported to the Committee on methods of achieving the means to have an annual data collection plan which integrates the collection of data with stock assessment needs. At this time there is not a clear picture of which data deficiencies currently exist to conduct stock assessments. To decide which data will need to be collected in future years to produce a reliable stock assessment, it is necessary to determine which data are currently available. In establishing a process and goals for data collection, stock assessment needs must be considered. Lukens distributed a draft Request for Proposal (RFP) which was reviewed by Committee members. The following species are to be considered: spotted seatrout, sheepshead, Spanish mackerel, Gulf flounder, southern flounder, black drum, red drum, striped mullet, gray triggerfish, and gray snapper. Several suggestions and recommendations were made by Committee members and it was agreed that after the RFP has been edited and fleshed out, it will be distributed by R. Lukens. Lukens requested that Committee members contact him with any suggestions and advice on the RFP.

M. Osborn reported that the NMFS will be conducting a data users workshop for their new employees in late January or February, 1999. This workshop could also be beneficial for state employees using the NMFS database. A notice giving the details will be forthcoming.

FIN/ACCSP Compatibility Work Group

Discussion of Meeting Summary - D. Donaldson reported that the work group met to compare the FIN and the ACCSP Program Design Documents for compatibility. Several recommendations were presented as a result of that meeting. The recommendations were:

- Law Enforcement - to have the GSMFC Law Enforcement Committee (LEC) develop a law enforcement policy and also to address the issue of confidentiality
- Standard forms and codes - L. Kline suggested having the list of standard codes, which has been approved by ACCSP, reviewed by FIN members to assure that issues in the Caribbean

and Gulf are included in this list. The ACCSP Standard Codes Committee is meeting in January, 1999 and it was agreed that D. Donaldson will attend that meeting. M. Osborn requested input from the Gulf states in formulating water body codes and noted that she needs any changes to the current list.

- Aquaculture - Since aquaculture is one of the areas covered by the ACCSP and not by the FIN, this subject was discussed by the Committee. The ACCSP Management and Science Committee will meet at the Spring meeting and L. Kline will report back to this Committee on their findings. R. Lukens noted that the GSMFC is currently compiling information on aquaculture projects in the Gulf and he and L. Kline will exchange information. It was suggested that since the ACCSP has already developed a data management system, the FIN should work together with the ACCSP to utilize their design system instead of developing an entirely new system. The Committee agreed and directed staff to pursue this topic.
- D. Donaldson reported that J. Shepard is on the ACCSP Computer Technical Committee and he will act as proxy when Shepard cannot attend.

D. Donaldson noted that he, R. Lukens, and L. Kline meet periodically, as well as the FIN/ACCSP Compatibility Work Group, to compare similarities and differences in the ACCSP and the FIN to assure compatibility and comparability between the two groups. The Committee decided to schedule Work Group meetings annually to ensure compatibility and comparability.

Review and Discussion of FIN Program Design Document - As noted above the Work Group recommended that the GSMFC Law Enforcement Committee develop a law enforcement policy statement and address the issue of confidentiality. After lengthy discussion on the issues of law enforcement and confidentiality, this Committee agreed that law enforcement agencies are already considered a user group and would be governed by the same rules as they apply to all user groups. The Committee also made some revisions to the FIN Program Design Document and those revisions represent the administrative record for this portion of the meeting. D. Donaldson will discuss changes to the Program Design Document with the Gulf states law enforcement agencies and request that they draft a Law Enforcement Policy statement at their next meeting.

Update and Status of Atlantic Coastal Cooperative Statistics Program

L. Kline reported that the ACCSP Coordinating Council met in October and made some minor modifications to the Program Design Document. Final approval from the Council is expected

in December. The Florida trip ticket system and the NMFS-NE are on schedule for being brought into the data management system. Authorized users will be designated for the evaluation period. The FIN Committee decided to have Tom Fazio, project manager for ICF Kaiser, give a presentation at the next meeting on how the ACCSP data management system is set up. A budget prioritization process has been developed for distributing available funds. This process will solicit proposals from the ACCSP partners for funding needs. The Operations Committee will evaluate these proposals and use ACCSP funds to assist the state and federal partners in implementation. 1999 will see further development of the program. A pilot study will be conducted by the state of Massachusetts for processing multi-trip reporting forms particularly the lobster fishery. The state of Georgia is implementing a trip ticket program with the ACCSP providing some funding. The NMFS Southeast Region, North Carolina, and possibly Connecticut also will start moving their data into the data management system. A pilot study for the Social/Economic modules is being conducted focusing on commercial harvesters with the states of Georgia, Virginia, and Massachusetts. M. Osborn noted that prototype development will continue on other modules, i.e. biological, social/economic, metadata, and technological improvements.

Discussion of FIN and ACCSP Integration

R. Lukens reported to the Committee on the situation of having the South Atlantic states sitting on both the FIN and ACCSP. Since the two groups are coordinating their planning processes and are now moving into operational issues, Lukens proposed to take a recommendation to the ACCSP Coordinating Council and the GSMFC State-Federal Fisheries Management Committee, that by mid-1999 the South Atlantic states no longer attend the RecFIN/ComFIN meetings, but participate through the ACCSP. There will still be the opportunity for staff to attend one another's meetings and there would still be participation in work group activities. Presently the state and federal agencies are participating in two administrative activities. Lukens suggested that an addendum to the FIN MOU be drafted for approval by the Coordinating Council and the S-FFMC.

L. Kline noted that when the ACCSP program began three years ago, there was concern that the South Atlantic states be involved in RecFIN/ComFIN to assure that both programs were comparable. This has been done and there is compatibility. M. Osborn noted that this would be more efficient and would not duplicate travel, etc. After lengthy discussion by Committee members, **R. Lukens moved to recommend to the ACCSP Operations Committee and to the**

GSMFC State-Federal Management Committee that the South Atlantic states no longer attend FIN Committee meetings. The motion was seconded and passed unanimously.

Discussion of Vessel Registration System/Fishery Information System

M. Osborn reported that public comments have been incorporated in the document concerning the Vessel Registration System (VRS)/Fishery Information System (FIS). This document is now at the regional office, headquarters office, and general counsel for review. After being approved, it will be sent to Congress. As soon as it is available, Osborn will notify Committee members. It will also be available on the NMFS website.

Time Schedule and Location for Next Meeting

Because of the lateness of the Fall FIN meetings, the Committee agreed to hold the next meeting in early April, 1999 in Puerto Rico, with the second choice being St. Croix. The Biological/Environmental Work Group will also meet prior to the Committee meetings. In the future, the meeting schedule will return to the February/September schedule.

Other Business

The FIN brochure was presented to the GSMFC Recreational/Commercial Advisory Panel in October and that group felt the brochure was easy to understand and would be beneficial as an educational tool. After discussion, the Committee agreed that staff would check with State Directors to determine the number of brochures needed by each agency.

There being no further business, the meeting was adjourned at 2:30 pm.

**SOUTHEAST RECREATIONAL FISHERIES INFORMATION NETWORK [RecFIN(SE)]
MINUTES**

Tampa, Florida

Wednesday, November 11, 1998

Michelle Kasprzak, proxy for J. Shepard, called the meeting to order at 8:30 am. The following members, staff, and others were present:

Members

Page Campbell, (proxy for L. Green), TPWD, Rockport, TX
Bob Dixon, NMFS, Beaufort, NC
Stephen Holiman, NMFS, St. Petersburg, FL
Christine Johnson, (proxy for T. Van Devender), MDMR, Biloxi, MS
Michelle Kasprzak, (proxy for J. Shepard), LDWF, Baton Rouge, LA
Lisa Kline, ASMFC, Washington, DC
Wilson Laney, USFWS, Raleigh, NC
Skip Lazauski, AMRD, Gulf Shores, AL
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
Bryan Stone, SCDNR, Charleston, SC
Carter Watterson, (proxy for D. Mumford), NCDMF, Washington, NC

Others

Kevin Anson, AMRD, Gulf Shores, AL
Bruce Joule, MDMR, West Boothbay Harbor, ME
John Poffenberger, NMFS, Miami, FL

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 February 24 and 25, 1998 in Tampa, Florida were approved as written.

Presentation of Information Regarding Non-Hook-and-Line Fisheries

D. Donaldson reviewed decisions made at the last meeting concerning the task dealing with non-hook-and-line fisheries. This task was identified as high priority from the facilitated session held in Miami. Donaldson distributed a compilation of the information on various gears which was supplied by Committee members. Committee members reviewed the document and M. Osborn noted that two tables may be necessary; one to cover shellfish and one to cover finfish. After discussion, it was agreed that D. Donaldson will modify the tables, to include species, and send to Committee members for prioritization and completion. In the future this fishery will be referred to as *non-rod-and-reel*.

Presentation of Information on Fishing Tournaments

This is Task 15 in the Operations Plan. D. Donaldson noted that at the last meeting it was decided that the members would begin compiling information about fishing tournaments. The first part of this task is complete and a list of fishing tournaments was distributed to Committee members. R. Lukens noted that the magnitude of participation is unknown and there is no real accountability. Other issues discussed were the impact on the resource, economic impact on communities involved in fishing tournaments, the use of samplers at tournaments, issuing catch cards to tournament directors, budget considerations, and the possibility of having graduate students analyze data from fishing tournaments. Members discussed the problems associated with regulating tournaments and the public's perception of government interference. The possibility of a pilot study was also discussed. **M. Osborn moved to have the Biological/Environmental Work Group review the list of fishing tournaments and develop a plan for sampling tournaments, to include costs, and collection methods. The motion was seconded and passed unanimously.**

Quota Monitoring

S. Holiman reported that there is a congressionally mandated quota monitoring requirement for the recreational red snapper fishery in the Gulf of Mexico. This involves a projection of expected harvest prior to the start of the fishing year and evaluation of current data as it becomes available. For the benefit of the management process, projections are available in the fall prior to the November Council meeting. In subsequent years the closure will be based on original projections. MRFSS,

head boat, and Texas data are utilized to calculate the projections. In 1997 the red snapper fishery closed on November 27; in 1998 it closed on September 30, and the projection for 1999 (with a 5 fish bag limit and 15 inches minimum size limit) is a closure occurring on August 30.

Discussion followed with some Committee members expressing concern over using quotas and closures to manage a recreational fishery. R. Lukens suggested that this may be the time for this Committee to develop a policy statement on the use of quotas for managing recreational fisheries. L. Kline noted that the ACCSP has discussed quota monitoring and agrees that this is not the best way to manage a fishery. The ACCSP Coordinating Council wants information on the alternatives, costs, etc. The ACCSP Recreational Technical Committee is investigating this issue. **R. Lukens moved to have the RecFIN(SE) coordinate with the ACCSP to develop a position statement regarding the use of quota monitoring and closures in recreational fisheries. In the process, rationale will be provided for the statement as drafted. The motion was seconded and passed unanimously.** The Committee agreed that R. Lukens and D. Donaldson will be added to the ACCSP Recreational Quota Monitoring Subcommittee until such time as someone from one of the Gulf states is available.

Evaluation of Compatibility of Texas Survey Data

A table was distributed to Committee members comparing the MRFSS with the Texas survey. P. Campbell reported that Texas is considering using the current pilot methodology being tested in the Gulf of Mexico for collecting charter boat effort. There was discussion on the issue of the perception that Texas is not involved as are the other Gulf states. M. Osborn suggested putting Texas data on the website. It was noted that merging the Texas data with the MRFSS data is one of the goals for the RecFIN and the ACCSP. Although the Texas survey does not address discards or shore mode data for anglers, the two surveys are compatible. The Committee agreed that R. Lukens will initiate discussion with H. Osburn of the Texas Parks and Wildlife Department (TPWD) concerning what would be required to begin the process of establishing a charter boat sampling frame for the state of Texas. P. Campbell will also discuss this with Osburn. It was also noted that Texas has done a pilot study to estimate the number of fish released by anglers. Campbell will send a copy of the federal report on this study to D. Donaldson for distribution to the Committee.

Evaluation of Potential Improvements to Intercept Site Selection Process

M. Osborn gave a presentation to the Committee on improvements to the intercept site selection process. (Attachment A) Staff will distribute copies of the presentation to Committee members. D. Donaldson noted that the purpose of this presentation, as identified at the facilitated session, was to address the potential problem of geographic distribution of samples. As indicated in M. Osborn's presentation, it appears that this issue has been resolved.

Work Group Reports

Biological/Environmental Work Group - D. Donaldson reported that the Biological/Environmental Work Group met on November 10, 1998. There were five topics discussed which included the Marine Recreational Fisheries Survey in the Caribbean, the QA/QC document, metadata relating to fishing regulations, private access, and night fishing. One of the high priority issues identified by the Committee was to have some routine data collection activities for recreational fishing in the Caribbean. The Work Group has recommended the following concerning the Marine Recreational Fisheries Survey in the Caribbean:

- an access point intercept survey is the best method to collect catch information.
- compile a site register in the U. S. Virgin Islands and Puerto Rico.
- evaluation of methods for estimating effort
- investigate possible sources of funding, possibly the USFWS proposal

C. Lilyestrom will provide a copy of the proposal between the U. S. Fish and Wildlife Service (USFWS) and Puerto Rico to staff for distribution to Committee members. Lilyestrom noted that a creel survey has been implemented in the Virgin Islands with Ivan Mateo of St. Croix in charge of that program. D. Donaldson requested that C. Lilyestrom send him a copy of the current site register database and form. A workshop to be held in the Caribbean to discuss these issues was postponed because of Hurricane George, but will be rescheduled in the future.

Donaldson distributed copies of the QA/QC document to Committee members and noted that this document has been modified by the Work Group. Final approval of the QA/QC will be sought at a later time due to time constraints, however members can contact Donaldson with any comments or corrections. Some of the modifications were as follows:

- Language on mandatory reporting, participation, and review of data is included.
- In the form design section, pre-testing language has been added.

- A validation section has been added.
- Language on scanning and other technology has been added to the data entry section.

The Biological/Environmental Work Group next reviewed Metadata and made the following recommendations:

- Since the GSMFC produces a Law Summary each year for the Gulf, request that the ASMFC Law Enforcement Committee consider a similar document for the Atlantic states.
- Have the ACCSP Operations Committee consider development of a data base design for metadata for fishing regulations.
- Investigate web access for metadata updates by law enforcement personnel.

R. Lukens moved to accept the recommendations of the Biological/Environmental Work Group. These recommendations are not listed in priority order. The motion was seconded and passed unanimously. Staff will provide a copy of the GSMFC Law Summary to L. Kline.

D. Donaldson reported that another task discussed by the Work Group was the compilation of a list of private access sites in the Southeast. The following definition was developed: *Private access sites are sites where the public does not readily have access and these include, privately owned shoreline, waterfront residences, waterfront communities, private marinas, and business owned shoreline.* The Work Group suggested developing test areas. P. Campbell will send the Texas Technical Series - *Inventory of Sites* to D. Donaldson, and C. Watterson will check on the North Carolina site inventory. After discussion, it was agreed that Committee members would examine area maps for possible selection sites to be used as test areas. This subject will be on the agenda for the next RecFIN meeting.

The Work Group also addressed the task of examining the issue of night fishing activity. The Work Group found that the most activity is during waves 4 through 6 and they suggested examining the MRFSS intercept and telephone data for additional information. Finfish only will be considered for this activity. The Work Group agreed to concentrate on North Carolina and the Gulf states for pilot studies.

Social/Economic Work Group - D. Donaldson reported that the Social/Economic Work Group met in Tampa in July. Donaldson distributed a list of minimum data elements that were accepted by the Work Group. The Work Group agreed, that since the ACCSP Committee on Economic and Social Sciences (CESS) has done a great deal of work in these areas, it would be

counterproductive for the Social/Economic Work Group to do the same. Therefore, the Work Group has agreed to review what has been compiled by the ACCSP. The structure of the two committees was compared, and it was noted that with the exception of Tony Lamberte of the Gulf of Mexico Fishery Management Council (GMFMC), all other members were on both groups. The Work Group recommended that T. Lamberte be added to the CESS, and that D. Donaldson attend meetings of both groups to provide coordination between the programs.

The Work Group next examined the issue of quality assurance/quality control standards. Recommended changes in language will be incorporated into the document. The Work Group recommended that the next section developed be on mail surveys. They also suggested that the document be expanded to cover both commercial and recreational aspects which would move the development of this document to the Fisheries Information Network (FIN) Committee. **R. Lukens, moved that Tony Lamberte be added to the CESS as liaison between RecFIN(SE) and ACCSP for the purposes of social and economic data management. The motion passed unanimously. R. Lukens moved to task the Social/Economic Work Group with the development in the Quality Assurance/Quality Control document of the section on mail surveys. The motion passed unanimously. R. Lukens moved that this Committee recommend to the ComFIN that a QA/QC document be developed for commercial data collection activity. The motion was seconded and passed unanimously.**

Update on Charter Boat Pilot Survey in the Gulf of Mexico

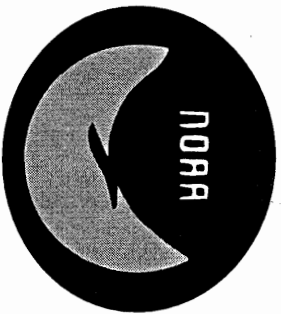
D. Donaldson reported that in September 1997 the NMFS and the Gulf states and GSMFC began a charter boat pilot survey. This survey compares the current MRFSS phone survey, a captains phone survey, and the logbook panel survey. This program was initially scheduled to run through August 1998. The GSMFC acquired additional funding and the partners decided to continue the survey until December 1998. The project will continue through waves 5 and 6, however the panel logbook survey ended in August. During summer months the response rate was as high as 75 - 80%. The refusal rate throughout the survey has been between 2 - 5%. The closure of the red snapper fishery may effect refusal rate. The methodologies will evaluated to determine the best method for collecting charter boat effort data. Information is being compiled for the evaluation. The evaluation is planned for late spring or early summer of 1999. R. Lukens noted that the survey will continue into 1999.

Other Business

M. Osborn gave an update on the MRFSS 1999 to 2001 contract. The contract for the intercept surveys was awarded to Macro International on September 30, 1998. Debriefings have been held with Quantech, the incumbent contractor. However, Quantech has filed a protest with the GAO. The GAO has 100 days to resolve the protest, which is February 12, 1999. M. Osborn stated that Macro International has been doing the telephone survey since 1996. When amendments and negotiations are complete a contract award for the telephone survey should be finalized by the end of December 1998. Osborn will notify Committee members when this is accomplished.

B. Dixon noted that funding for the head boat survey would come from MARFIN funds and would cover through the end of September 1999.

There being no further business, the meeting was adjourned at 4:20 pm.



MRFSS Site Selection

November, 1998

Presented by Maury Osborn

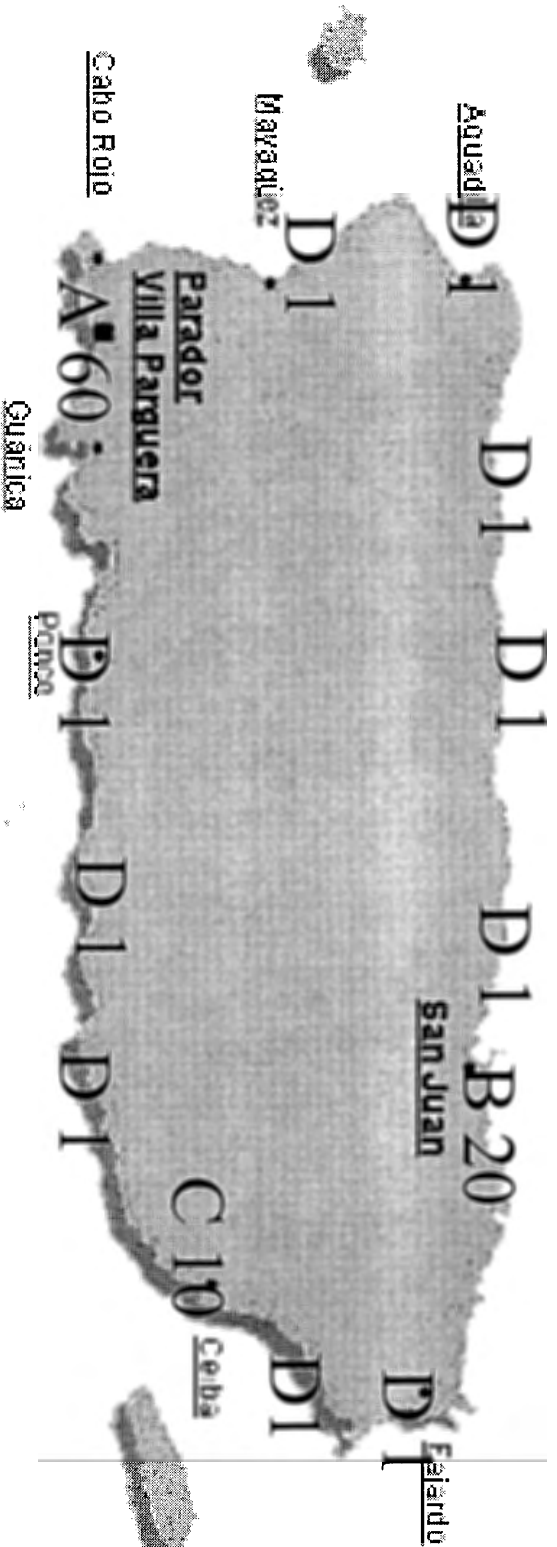
Sampling Goals

- Representative distributions of trips
 - Geographic:
 - States
 - Counties
 - Sites
 - Temporal:
 - Waves and months
 - Weeks
 - Day type (WE/WD) and days (Mon., Tues., etc)

Example

Distribution of Angler Trips among Sites

13 total sites - 100 (total) trips per day



Strategy #1

- Sample Size (quota) = 600 interviews
- 6 assignments for each site
- 78 total assignments
- Results
 - A (60 trips/day): 6 days / 360 interviews
 - B (20 trips/day): 6 days / 120 interviews
 - C (10 trips/day): 6 days / 60 interviews
 - D (1 trip/day): 6 days x 10 sites / 60 interviews

#1 Assumptions & Problems

- Treats all sites the same - no pps
- Geographically representative
- Not enough fishing days represented
- What can we do?
 - Set a cap on the number of interviews allowed per assignment

Strategy #2

- Sample Size (quota) = 600 interviews
- Set cap of 20 interviews per assignment
- 10 assignments for each site (130 total)
- Results
 - A (60 trips/day): 10 days / 200 interviews
 - B (20 trips/day): 10 days / 200 interviews
 - C (10 trips/day): 10 days / 100 interviews
 - D (1 trip/day): 10 days x 10 sites / 100 interviews

#2 Assumptions & Problems

- Treats all sites the same - no pps
- Not geographically representative
- Enough fishing days represented
- Too many assignments with low productivity
- What can we do?
 - Compensate for cap at more active sites

Strategy #3

- Sample Size (quota) = 600 interviews
- Set cap of 20 interviews per assignment
- More assignments for capped sites
- 90 total assignments
- Results
 - A (60 trips/day): 18 days / 360 interviews
 - B (20 trips/day): 6 days / 120 interviews
 - C (10 trips/day): 6 days / 60 interviews
 - D (1 trip/day): 6 days x 10 sites / 60 interviews

#3 Assumptions & Problems

- Geographically and temporally representative
- Still too many unproductive assignments
- What can we do?
 - Assume fishing is the same at high vs. low activity sites (species composition, catch rates)
 - Fewer assignments for low activity sites

Strategy #4

- Sample Size (quota) = 600 interviews
- Set cap of 20 interviews per assignment
- Even more assignments for capped sites
- 42 total assignments
- Results
 - A (60 trips/day): 20 days / 400 interviews
 - B (20 trips/day): 7 days / 140 interviews
 - C (10 trips/day): 5 days / 50 interviews
 - D (1 trip/day): 1 day x 10 sites / 10 interviews

#4 Assumptions & Problems

- Not as many samples but more days at high activity sites
- Pretty close to current method
- What can we do?
 - Allow selection of alternate sites

Strategy #5

- Sample Size (quota) = 600 interviews
- Set cap of 20 interviews per assignment
- Even more assignments for capped sites
- Allow alternate sites when no fishing is seen
- 33 total assignments
- Results
 - A (60 trips/day): 20 days / 400 interviews
 - B (20 trips/day): 7 days / 140 interviews
 - C (10 trips/day): 5 days / 50 interviews
 - D (1 trip/day): 1 day x 10 sites / 10 interviews

Current MRFSS Method

Two-Stage Site Draw

- Sites are weighted:
 - Site pressure estimated
 - Site pressure rank (category) assigned
- First stage
 - Divide assignments among pressure ranks
 - Fixed percentage for each rank
- Second stage - Randomly select sites within each pressure rank

Current MRFSS Method Pressure Ranks

■ 0 = 1-4 interviews

■ 1 = 5-8

■ 2 = 9-12

■ 3 = 13-19

■ 4 = 20-29

■ 5 = 30-49

■ 6 = 50-79

■ 7 = 80+

Example 1 - Current method

Example 1 - Results

Example 2 - Current method

Year	2000	2001	2002	2003	2004	2005
Revenue						
Expenses						
Net Income						
Assets						
Liabilities						
Equity						

Example 2 - Results

100

100

100

MRFSS Site Sampling Current Method

- Cap on interviews/assignment
- Emphasis on high activity sites
- Allow alternate sites/alternate modes

MRFSS Site Sampling New Ideas (Pacific)

- Systematic/Random Sampling
 - Separate pull by week day type
 - Sites duplicated in list according to weight
 - Sort by state and county
 - Set starting point and sample interval
 - Probability 1 sites - select up front according to weight, then strip out remaining duplicates, and select rest
 - Lay sites across calendar matrix

MRFSS Site Sampling

New Ideas

■ Bus-Route Sampling

- Sites grouped into clusters
- No freedom to choose alternate sites
- Assignments based on cluster
- Time at each site in cluster set by pressure

MRFSS Site Sampling

New Ideas

- Stratification based on pressure
 - Sample high pressure sites at high rate
 - Sample low pressure sites at minimum rate
- Estimate by strata
 - Tricky part is estimating effort distribution

Mississippi/Louisiana Habitat Protection Advisory Panel Meeting
Tuesday, November 17, 1998
Holiday Inn Crowne Plaza
New Orleans, LA

ATTENDANCE

Members

Bill Berry	Burlington Resources
Cynthia Sarthou	Gulf Restoration Network
Randy Lanctot	Louisiana Wildlife Federation
Glenn Thomas	Louisiana Department of Wildlife and Fisheries
David Richard	Stream Property Management, Inc.
Ronny Paille (Representing David Frugé)	U.S. Fish and Wildlife Service
Andreas Mager	National Marine Fisheries Service

Staff

Jeff Rester
Cheryl Noble

Others

Vincent Cottone	Texaco Exploration and Production, Inc.
Doug Frugé	U.S. Fish and Wildlife Service
Jeff Harris	Louisiana Department of Natural Resources
Greg Miller	National Marine Fisheries Service
Allan Ensminger	Wetlands and Wildlife Management Company
Rick Ruebsamen	National Marine Fisheries Service

Call to Order and Introduction of Advisory Panel Members

Cynthia Sarthou called the meeting to order at 9:18 a.m. and each panel member and guest introduced themselves.

Adoption of Agenda

If F. Deegen attends, he will show a video on the effects of Hurricane Georges to the barrier islands off Mississippi under Other Business. **R. Lanctot moved to adopt the agenda with this change. D. Richard seconded it and it passed unanimously.**

Approval of Minutes

D. Richard asked if the comments from the last advisory panel (AP) meeting were actually taken into consideration by the Council. C. Sarthou and D. Frugé said the Council discussed the comments submitted by the Advisory Panel extensively and some were incorporated into the EFH amendment. D. Richard asked J. Rester to send him a copy of the revised amendment. **D. Richard moved to approve the minutes from the June 22, 1998 meeting as submitted. B. Berry seconded it and it passed unanimously.**

Update on Eden Isles Project

G. Miller distributed a Project Update (Attachment I) from the NMFS Coastal Louisiana Office on the Eden Isles East Marina and Residential Development Project in St. Tammany Parish, Louisiana. The Tammany Holding Corporation has applied for a permit to develop a large waterfront housing development with associated marina. He gave a brief property history and stated that in the early 1990's NMFS sought to acquire this property in order to conduct wetland preservation activities. Unfortunately, the property was sold to the Tammany Holding Corporation.

G. Miller stated that about a year ago, the developer asked NMFS to participate in a pre-application for the project outlined in the attachment. The first phase of the project would impact up to 120 acres of wet agricultural lands, less than one acre of fringing brackish marsh, and up to 35 acres of submerged aquatic vegetation in Lake Pontchartrain. The developer asked for NMFS's assistance in developing a conservation plan to avoid these areas. With the help of NMFS and other resource agencies, the subject of mitigation needs was broached and the developer agreed to purchase property off site and either donate it to a private land holding co-op or to a refuge system.

The land on the north shore of Lake Ponchartrain would be too expensive to acquire for mitigation needs so the developers decided on an area adjacent to the north part of the property to be developed. G. Miller then showed the AP maps of the land being developed (in Attachment) and the proposed plans for mitigation. He said the developer was initially concerned with the costs of on-site mitigation and the fact that over 240 acres of the property would no longer be available for development. G. Miller said he and R. Ruebsamen showed the developers other sites in different parts of the country that were developed adjacent to wetlands using similar plans as these. These developments were successful as planned and the value of the lots increased and the areas are recuperating as planned.

The permit for this development was issued early this fall and it included a proposal for mitigation and a time frame for implementing this project. The project is not wholly endorsed by the community. One group threatened to file suit but as of last week an injunction has not been started so it probably won't be pursued. The next step will be to continue working with the developers for final mitigation plan development.

D. Richard ask where is the developer going to the get dirt to bring up the elevation and G. Miller said onsite, they will borrow it from a channel that surrounds the perimeter of the mitigation area. D. Richard asked if the mitigation will be restricted and if they will have long term monitoring of this project. G. Miller said yes to both counts. C. Sarthou asked if the AP needed to do anything in reference to this project and G. Miller said no he just wanted to give the AP and update.

Caminada Cove Finger-fill Housing Development

Ric Ruebsamen distributed a project update (Attachment II) from the NMFS Coastal Louisiana Office on the Caminada Cove Finger-fill Housing Development. He said this proposed project area is on Grand Isle in Jefferson Parish, Louisiana. It is a proposal to construct a dredge and fill project for housing development. He showed a map of the site and said that for reference, the area immediately to the west of the site was an area that was the subject of a very controversial permit application called Plantation Landings. That project was proposed in the late 1980's and the GMFMC, NMFS and EPA strongly opposed issuing a permit. The COE did not deny the permit but

required additional mitigation than what the applicant proposed. The permit applicant refused to accept the additional mitigation and did not sign the permit.

This project entails about 115 acres of tidal influenced wetlands. The project is divided into four phases but the application is just to construct phase 1 which is about a 40 acre project. Phases 2, 3 and 4 will be developed in the future. When this project was advertised for comments, all of the state and federal natural resource agencies provided adverse comments and the GMFMC wrote a letter to COE expressing their concerns about the project. The issues raised by the agencies involved the loss of wetland habitat, water quality, and most importantly, the need for a thorough alternative analysis of this project to be done in a different location. The permit application is still pending and the developer is revising the application. There are quite a few problems with this project and it will probably never be permitted. There is no need for action from the AP or GMFMC because the GMFMC has already stated their position. This is just a wait and see project.

R. Lanctot asked what is the solution to this problem and is it possible to acquire this property from the private owner to keep it from being developed. There should be a mechanism in which to acquire property that is critical EFH and would be irreplaceable, and he asked if the AP should encourage the exploration of this. FEMA is cracking down on insurance in this area so that may discourage development of this land but the possibility of a permit being issued still exists.

After further discussion, R. Lanctot moved that the AP recommend to the Council that in being consistent with the EFH initiative, explore different avenues in which to secure properties with important fish habitat that are under significant pressure for development and to use this site as an example to encourage a negotiation of agreements or acquisition to secure that habitat. B. Berry seconded it. A. Mager said this would not be helpful as a generic recommendation. The AP should suggest to whom the letter should be addressed. R. Lanctot suggested asking the GMFMC's Habitat Protection Committee to explore solutions to these problems, discuss the concept, etc. He suggested exploring how these critical lands can be purchased. C. Sarthou suggested sending a letter to NMFS, FWS and the COE asking they work together to identify areas such as this and identify potential sources or avenues to purchase these properties to keep them from being developed. The AP agreed that this is important but stated the owner of these properties must agree to sell before anything can be done. G. Thomas recommended to ask the GMFMC to designate this area as a habitat area of particular concern. R. Ruebsamen suggested the GMFMC should contact the Barataria/Terrebonne National Estuary Program and the state DNR to acknowledge the significance of this area as EFH and urge the state to seek ways to secure that habitat in the undeveloped condition. Of course, the broader issue would be to do this sort of thing Gulf wide and the AP should ask the GMFMC to pursue this. C. Sarthou said everyone seems to be in agreement that there is great concern with this issue but the AP needs to be specific on who to address the letter to that we're asking the GMFMC to write. A. Mager suggested asking the GMFMC to direct letters of inquiry to see what the potential is for doing this. He suggested targeting groups such as Coastal America, Estuary Programs, Nature Conservancy and all state and federal marine resources agencies. Some of these groups may already have a mechanism to purchase lands such as this.

C. Sarthou said the AP should request the GMFMC send a generic letter to various groups, i.e., the state, Nature Conservancy, Coastal America, Fish and Wildlife Foundation, COE, etc.

stating the GMFMC is extremely concerned about this project because this is a habitat of particular concern and that the assessment shows that it is an unique and irreplaceable habitat, and inquire if there is some way that any of these groups could potentially explore the possibility of purchasing this property in order to secure the habitat. If the GMFMC gets positive feedback from this then it could be pursued further. If these agencies can not purchase the property, maybe one of the agencies would know of one that can. Also, a letter should be sent to the Assistant Secretary for Civil Works, COE (national office), Mr. Joe Westfall, to make him aware the COE in New Orleans is considering issuing a permit for this development. The Clean Water Action Plan requires that office to look for irreplaceable and valuable habitats to purchase in order to offset wetlands losses in other areas so they may wish to acquire the property.

R. Lanctot revised the previous motion to incorporate the above discussion and request the GMFMC correspond with various government and non-government agencies/organizations as mentioned above, to state the importance of this particular habitat and then state other such habitats Gulf wide, and to urge them to explore whether those groups are interested or have the capabilities to enter into negotiations to acquire this land. A. Mager seconded it and it passed unanimously.

G. Thomas asked if part of the analysis of this project included investigating alternative areas for that type of development because there are a lot more disturbed environments not far away from that area. R. Ruebsamen said that one of the recommendations made by all of the commenting agencies was there is a need to evaluate the project need and have project alternatives. He said if he remembers accurately, he has seen documents from the permit applicant on the need for the project but not on any alternatives. He said that ultimately, it will be the COE's responsibility to document that information validating any information the applicant's agent provides.

A. Mager suggested panel members send individual comments to the GMFMC also stating that that area should be identified as a habitat area of particular concern.

Update on the Navigation Canal Between the GIWW and the Barataria Bay Waterway

G. Miller distributed a Project Update (Attachment III) from the NMFS Coastal Louisiana Office on the Barataria Bay Waterway-GIWW Connector Channel in the Jefferson Parish Port District. He said that this is a navigational channel proposal. He showed a map of the location where the work is being proposed and said the new channel would provide a larger maritime connection between industrial facilities in the area. The main reason for requesting the permit is there is a narrow bridge across the Barataria Bay Waterway that prevents the passage of larger vessels and equipment. The NMFS, FWS, and LDWF all submitted comments opposing the project and suggested analyzing the alternative of replacing the bridge with a larger structure. He stated the Perot-Rigolettes Peninsula is rapidly disintegrating and the Port District abandoned a project in which dredged material was to be used to restore the peninsula. Because of the dredged material's poor sediment quality, subsurface instability, high erosion rates and high costs of maintaining the project, they felt mitigation with the use of dredge material in this area would not be successful.

Impacts of this project have been estimated at approximately 177 acres of water bottoms and approximately 5 acres of emergent marsh during the construction of the containment levee. Additional concerns about long term maintenance plans, where the material will be placed, the impacts on hydrology in the area, salinity issues, and secondary impacts from the use of the channels

such as wake erosion, groundlings, marine spills, etc. has been discussed. The COE held a public hearing on this issue and it was well attended by all sectors who would use the channel and most in attendance felt that this would be an unnecessary environmental disaster. NMFS asked state transportation officials to compare the costs/benefits of the new channel versus bridge replacement. The port district has withdrawn the application pending the completion of the analysis.

The applicant did promote the use of dredge material for restoration of about 640 acres of wetlands. This mitigation has been a strong selling point of this project but based on other projects, that may not be the actual acreage gained when the restoration is complete. C. Sarthou stated that it seems building a bridge would be more costly and asked who would pay for this. There is limited funds for navigational projects but they may get some private funding since it will benefit the private sector. The AP does not need to act on this at this time because the applicant did withdraw the application.

Update on Port Activity Around Port Fourchon, Louisiana

R. Ruebsamen distributed a Project Update (Attachment IV) from the NMFS Coastal Louisiana Office on the Port Fourchon Expansion. This project has been on the books of the COE for some time. In September, the Greater Lafourche Port Commission submitted a permit application proposing to dredge almost a mile of Flotation Canal, excavate two slips, place fill in the Plaisance marsh management area to create marsh elevations as mitigation.

Since the rebound of the offshore oil and gas industry, this facility has been extremely busy so they wish to expand the area of operations. Habitat impacts include the filling of 80 acres of salt marsh, roughly 1,000 acres of unvegetated water bottoms, and about 130 acres of intertidal flats. Associated with that is the dredging of about 30 acres of salt marsh and 150 acres of shallow water bottoms within the project area. General features of the proposal is to dredge the flotation canal to deepen and widen it.

The initial phase of the proposal is to dredge two canals with the purpose of supporting the offshore oil and gas industry. The north/south canal is within an area that is semi-impounded and has been for quite a number of years. There is very limited tidal connection to the area, it is restricted to a few culverts, one that is open and two that are flap-gated. The work area is also an authorized disposal area for beneficial use by the COE in maintenance dredging.

The reason the estuarine fill area appears so large on the upper portion of the map (in Attachment) is because that is the proposed mitigation area. Mitigation would involve the placement of fill material in another area that is semi-impounded and place the material at marsh elevations in a proposed 710 acre marsh area. There are two future phases proposed in this project and if the offshore industry continues to grow, they will certainly be proposed in the not too distant future.

With that background, the NMFS, USFWS and LDWF provided comments on the project. These comments are in two main categories. One was requesting again a thorough assessment of needs and alternatives. The second focused on the mitigation, mainly, how to evaluate the adequacy of that mitigation to offset dredging and filling. R. Ruebsamen said the COE will probably determine that this is the best site and there are no alternatives. There is a clearly demonstrated need

for the project, so this permit will probably be issued soon with the requirement that this mitigation plan or something similar to it be implemented as a project component.

The COE is currently evaluating the permit application and the comments provided by the agencies and there will probably be a meeting between the agencies and the Port Commission to discuss all of the concerns.

Update on the Big Island Restoration Project

R. Ruebsamen said there are two projects in the Atchafalaya River Delta which were funded under the Breaux Act and NMFS was the federal sponsor for these projects. Construction on the projects were initiated last spring and were completed in September of this year under-budget. There were some modifications made during construction that included the addition of an added distributary channel and extension of a channel that runs from the main cut on the Big Island side back to Big Island. Big Island is part of a state refuge and the refuge division requested a second modification to allow improved public access, primarily for hunters. He said they do not have the exact figures yet but the best estimate is that about 900 acres of intertidal habitat were created with the project. The project was designed to induce accretion in the area with an additional 2,000-3,000 acres to be added in the next 20 years on both the east and west sides of the river. So, overall the project was designed to create 3,000 - 4,000 acres of tidal influenced wetlands realizing that when the Atchafalaya River floods in the Spring there is a tidal signal but not a whole lot of tidal influence. However, during low water periods in the summer and fall, the area provides some fairly unique and very high quality marine fishery habitats.

This project, as do all Breaux Act projects, requires long term monitoring and the initial preconstruction monitoring, which is primarily photography, has been done. The plan is completed and DNR will be primarily responsible for implementation of the monitoring plan. NMFS is proposing to the corporate Task Force to expand the monitoring of this project with the reason being that during early negotiations on the project, the COE was extremely concerned that it would induce shoaling in part of the federal channel. The monitoring program designed for this project cannot document whether or not it is inducing shoaling. The proposal asks the Task Force to use some of the funds saved during construction to monitor if the project is having any affect on the federal channel and whether NMFS should assume some responsibility for the shoaling. If in fact it is shown that the project is causing some shoaling, the marsh creation area that is nearest the federal navigation channel has been set aside for the COE to use as a disposal area. If it doesn't show shoaling the area will be used in the future for some beneficial use such as a wetlands creation site.

There was a dedication ceremony in July on the project and it was very well attended. It seems to be very successful and the design of the project worked as planned creating the additional 2,000-3,000 acres.

R. Paille asked if they were able to established the elevation in which the material was placed and is it ideal. R. Ruebsamen said the engineers have completed their survey of the project area but he has not seen results. He said they should have a response to those type of questions within a couple of weeks. They are on target with the project and one of the earlier efforts they made was to work very closely with the company doing construction to make sure they understood what the

objective of the project was. He said one of the problems they've had with the CWPPRA process with contractors is they are only interested in dredging not what happens to the dredge material.

A. Mager asked if the monitoring of the project was approved. R. Ruebsamen said meetings are scheduled for the two Breaux Act Committees but he has no idea what the response will be for the request of funds to monitor. He said construction funds are limited so they may decide to use the funds elsewhere. The cost underrun was approximately \$250,000 and they are requesting approval of \$60,000 - \$70,000 for additional monitoring, data collection, and modeling work for future projections.

A. Mager asked if he thought it would be advantageous for the AP to ask the GMFMC to send a letter of support on the monitoring. R. Ruebsamen said it couldn't hurt but the two committees will meet to discuss this before it goes to the task force. If the committees choose not to forward the request to the task force, a letter from the GMFMC to the task force would not mean very much. He said if the GMFMC could get a letter out before the end of December, it may leverage our argument and the task force could choose to entertain the idea even if the committees don't forward it to them. **After discussion, A. Mager moved to send a letter to the Breaux Act Task Force in support of the added monitoring for the Big Island Project. R. Lanctot seconded it and it passed unanimously.** A. Mager and R. Ruebsamen will work with J. Rester to draft the letter with specific language on what the monitoring program involves.

D. Richard asked exactly what is the purpose of the increased monitoring. R. Ruebsamen said there are really two purposes. One is to gain a better understanding of why the project is doing whatever it does. The second is that if in the future the COE says our channel is shoaling, we will have it documented that it's not and therefore we will not free the disposal area to create 10 feet elevations. It's mainly to protect ourselves. D. Richard stated that he is supportive of the project and the motion, but feels the funds could be used for more work on the project and the monitoring could be done by another entity such as an university.

Presentation on the Destination Broadwater Casino Project

J. Rester distributed the public notice (Attachment V) and gave a presentation on the proposed dockside casino resort complex at the Broadwater Marina location in Biloxi, Mississippi. He stated that if anyone is interested in obtaining the full proposal he will provide a copy. He said basically, the applicants want to create a destination resort. He showed an aerial photograph south of U.S. Highway 90 and explained that currently there is a casino and marina with open water in the center at this location. He then showed an aerial photograph north of Highway 90 and stated there are currently hotels and a golf course at the location.

The applicant is proposing to construct a destination resort complex and this would entail waterside and landside development. The waterside development encompasses an area of 134 acres extending approximately 4,100 feet from the shoreline into the Mississippi Sound. They are proposing to build six casinos, six hotels and associated parking and extending the marina out into the Sound. The landside development will consist of convention hotels, a waterpark, an amusement park, a revitalized golf course, a movie theater, a seven acre retail market area, and parking for 5,250 vehicles. To eliminate the impact to through traffic on Highway 90, they are proposing to build an

elevated modified cloverleaf interchange over the highway and dedicated exit lanes along with a fixed guideway (people mover) to link the waterside with the landside.

Once completed, the project will cover 325 acres. The work description consists of filling 38.4 acres of water bottoms in the Mississippi Sound to an elevation of +10 feet associated with construction of a man-made peninsula. It will fill 12 acres of water bottoms associated with the construction of breakwaters at the marina. The marina breakwaters are approximately 3,500 feet in length with a crest width of 60 feet. They also want to dredge a total of 6,000 cubic yards of material from the Mississippi Sound consisting of 577,414 cubic yards of new dredging for the world harbor, marina basin and channels; and 4,166 cubic yards of maintenance dredging for improvements to the existing Broadwater navigation channel. He said they will be moving the existing channels out and dredging them. They propose to install 7,587 linear feet of sheetpile bulkheads associated with the construction of the casino graving docks and World Harbor and construct 6.5 acres of concrete wharf structures. They will also fill two isolated wetlands north of Highway 90 associated with the landside development.

The proposed project will result in the filling or permanent shading of 66 acres of water bottoms, and filling 3.6 acres of isolated wetlands. In order to compensate for these impacts, a total of 83 acres of on-site and off-site mitigation is proposed. On-site mitigation includes the creation of 17 acres of tidal marsh, shallow water, and submerged aquatic vegetation areas. Off-site mitigation will include 66 acres of marsh creation and restoration at a site in the Mississippi Coastal Preserves Program. J. Rester stated this project would employ 25,000 new people in the coastal Mississippi area and expects over 1,000 new visitors every day.

The NMFS has concerns that this project would have substantial adverse impacts on aquatic resources of national importance. They are also concerned about the loss of marine habitats because the mitigation is not sufficient to compensate the impacts of the project. There is the probability of avoidance and minimization to reduce the impacts. They want all non-gaming activity which would be the hotels, parking entertainment complex to be located north of Highway 90. Also, this project warrants an EIS which would address water quality, project and mitigation alternatives, participated development in the coast of Mississippi as a result of the project, and how it would affect commercial fisheries.

The FWS also has concerns about the project. They are opposed to the issuance of a permit. Again, the project would have substantial unacceptable adverse affects on the aquatic resources and there is unquantified accumulative and secondary impacts of discharge to waters. They too think this project should require an EIS.

The EPA is also concerned about the project. They feel the permit should not be issued and the project warrants an EIS. Also, there are no provisions for new wastewater treatment plants and existing wastewater treatment facilities do not currently have the capacity to accommodate the additional demands.

C. Sarthou said there are three law suits pending over casino projects in Mississippi because of cumulative impacts and potential cumulative impacts. They asked the COE to do a programmatic EIS for all casino development on the Gulf Coast of Mississippi and the COE steadfastly refused

stating that each casino project should be considered individually so they don't want to consider cumulative impacts of casino developments.

R. Lanctot asked if this is state water bottoms and J. Rester said yes. The DMR will have a public meeting in December and he will send the notice to the AP. C. Sarthou asked if the permit application requires them to build a sewage treatment plant for this entire facility. J. Rester said no that they feel upgrading the current plants will be sufficient. The AP disagrees with this, there is no way the sewage facilities could be feasible. The AP is also curious as to where the 25,000 new residents will live. This project would also affect Highway 90 and Interstate 10 - they will have to be expanded to accommodate this many new people. The only positive effect would be plenty of employment opportunities for coastal Mississippi.

C. Sarthou asked if she is correct in that she saw a letter stating GMFMC tentatively concurs with NMFS's position. A. Mager said yes that they have an agreement with the GMFMC for real substantial action. He said that in their initial letter opposing this they will ask for GMFMC concurrence and state their concurrence in the letter. Also, under the Clean Water Act there is a MOA with NMFS and the COE that specifies the procedures to follow to comment on projects and reserves the right to elevate if COE does not agree with NMFS's decision. A. Mager said if they decide to elevate they'll ask for the GMFMC's support of that elevation process. The initial letter has been sent stating we reserve our right to elevate if the COE issues the permit.

C. Sarthou asked if the AP should write the GMFMC asking them to support the elevation process if it comes to that. A. Mager said yes that it is very difficult to get issues elevated so it will help to have GMFMC's support. D. Frugé asked if NMFS's letter referenced EFH and A. Mager said no because that is not operative until the amendment is approved. He said we can ask for some type of formal feedback mechanism asking what they did with our recommendations and why. If the COE decides to issue the permit over our objections, the only option to us available is the elevation process. There was discussion on the fact that this is private property but the AP agrees that this is a public interest issue at the federal and state levels.

C. Sarthou asked if the applicants have a tidelands lease and if not that may be an option, just refuse to issue the lease. A. Mager said the AP should at least apprise the GMFMC's Habitat Subcommittee of this issue and get concurrence of support from the FWS, EPA and NMFS if it comes to an elevation. The timing is bad on this because there is a tight time frame to get the letter done. The full GMFMC would have to meet first before the letter can be sent.

R. Lanctot moved to ask the GMFMC to consider if they support the position of the three federal agencies on opposing this project. If they do, send a letter to NMFS stating they object to issuing a permit for this project and if a permit is issued, they support the elevation process in reference to this project. A. Mager seconded it and it passed unanimously.

After further discussion, the AP agreed that analysis needs to be done on the impact of casinos on the environment in the Mississippi Gulf Coast area.

Other Business

F. Deegen did attend, so there will be a video on the effects of Hurricane Georges to the Barrier Islands.

C. Sarthou said W. Swingle asked the AP to identify any individuals or associations in the Mississippi/Louisiana area that would be interested in habitat issues correspondence. She asked the AP to please send a list to J. Rester of these groups so they may be incorporated into the GMFMC mailing list.

After discussion on future meetings, the AP decided to hold all future meetings that will be held in New Orleans closer to the airport.

R. Lanctot stated permits in the Cocodrie, Louisiana area has subsided somewhat but he has concerns about development in that area. He said permits in this area and similar areas are issued regularly for small projects and it seems consideration has not been given to the impacts on the cumulative permits being issued. The AP feels an analysis should be done to estimate the magnitude of small permits (under 5 acres) issued nationwide. C. Sarthou said this has been brought to the COE's attention but nothing has been done.

There being no further business, R. Lanctot moved to adjourn. D. Richard seconded it and it passed unanimously. The meeting adjourned at 12:16 p.m.

DRAFT

SPOTTED SEATROUT TECHNICAL

TASK FORCE MINUTES

November 18-19, 1998

Biloxi, Mississippi

Chairman Harry Blanchet called the meeting to order at 1:27 p.m. The following were in attendance:

Members

Chuck Adams, University of Florida, Gainesville, FL

Harry Blanchet, LDWF, Baton Rouge, LA

Joe Gill, Jr., SASI, Ocean Springs, MS

Larry McEachron, TPWD, Rockport, TX

Dale Shively, TPWD, Austin, TX

Jerry Waller, ADCNR/MRD, Dauphin Island, AL

James Warren, USM/IMS/GCRL, Ocean Springs, MS

Others

Read Hendon, USM/IMS/GCRL, Ocean Springs, MS

Mike Buchanan, MDMR, Biloxi, MS

Staff

Steve VanderKooy, Program Coordinator, Ocean Springs, MS

Cindy Yocom, Staff Assistant, Ocean Springs, MS

Adoption of Agenda

Due to travel schedules, item 7 may be moved up on the agenda. With this possibility, C. Adams moved to accept the agenda. L. McEachron seconded the motion, and the agenda was adopted as presented.

Approval of Minutes

The summary of the work session held in Austin, Texas, on July 13-14, 1998 was reviewed and one correction was noted by H. Blanchet.

The minutes of the meeting held in Pensacola, Florida, on March 4-6, 1998 were reviewed, and several editorial comments were made. L. McEachron moved to adopt the minutes as revised. The motion was seconded by C. Adams and the minutes were approved.

**SEATROUT TTF
MINUTES
November 18-19, 1998
Page 2**

Review of Section Progress

The task force edited the draft FMP via the computer-projection unit. The following outstanding action items were noted:

Please note: No comments on those items still in need of input implies complete and total unwaivering acceptance of the material as written.

Section 3

3.2.2 Age and Growth

Tut and Larry both look over the paragraph describing the two techniques for length-at-age. Make your suggestions and return them here.

Larry, do we need a reference for an example of the Texas margin increment technique?

3.2.2.3 Mississippi

Tut needs to look over the section as ammended and make any last changes.

3.2.3.2.1 Maturation

The second paragraph has undergone major revision, please look over and comment.

3.2.3.2.3 Fecundity

Bob Muller volunteered Mike Murphy to draft a paragraph on batch fecundity in spotted seatrout.

Table 3.2

Mark Van Hoose needs to check for any references to include in Table 3.2 for Alabama.

3.2.5 Feeding, Prey and Predators

Can someone, anyone, find and check Lorio and Schafer 1966. This may be in a proceedings. If so, the date is probably not 1966, but I still need a complete reference and citation.

3.2.7 Movement and Migration

Larry, is the Simmons and Breur 1976 citation correct??

Section 4

4.2.1 Circulation Patterns and Tides

Bob Muller, do we have a reference we can cite for the semi-diurnal tides in Apalachicola Bay and do you want to add any additional information for southwest Florida?

4.3 Estuaries

If anyone has Lindall and Salamon 1977, please check it for accuracy in the text.

SEATROUT TTF

MINUTES

November 18-19, 1998

Page 3

4.3.1 Eastern Gulf

Bob Muller, I have a problem with the statement regarding sandy beaches to Cedar Key. I don't think this is correct. Can you check on it or maybe ask Phil Steele, either he wrote it or it came out of the EFH ammendment (although Jeff Rester can not find it).

Dale, is there a reference which can be cited for the last paragraph?

4.3.2 North Central Gulf

Dale, do we have a reference or is there one in the EFH ammendment regarding the acreage of filled estuarine habitat?

4.5.1 General Conditions

Harry check which paper(s) are correct for the Hein and Shapard 1979a citations. Is there a 1979b we need to cite elsewhere? Chances are this came out of the Louisiana profile.

4.6.2 Salinity, Temperature, and DO

Bob Muller check on Rutherford et al. 1989a. Do we have a 1989b and do we cite the correct paper?

4.7.1.1 Juveniles

Larry check the Zimmerman et al. 1990b reference for the same reason as above.

4.8.2.5 Industrial and Agricultural Run-off

Everyone, read the section since my massaging. I believe its "kinder and gentler" than it was.

4.9.3.4 Wetland Impoundment and Water Management

Everyone, read carefully, most everything from this point on is new. **Harry**, I discuss in detail the Atchafalya system, please provide any comment.

Section 5

Everyone if you haven't provided CZM information and historical changes in the regulations must do so. Draft a paragraph describing the CZM program in your state and provide a bulleted list of significant changes to Seatrout regulations that would impact the landings data interpretations.

Section 6

Everyone must read over this section carefully. Missing data, tables, etc. must be resolved ASAP. Your state is your area of expertise; if you do not provide the additional information requested in the text, your information may end up incorrect (a potentially embarassing situation).

Section 7

I believe that not many of us will challenge Chuck on the data. We will continue to work on general editing to make the format consistant.

**SEATROUT TTF
MINUTES
November 18-19, 1998
Page 4**

Section 8

8.1.1 Gill Net Harvesters

Harry, please evaluate the statement regarding Louisiana gill net landings.

8.2 Ethnic Characteristics

Larry, read the paragraph on Texas and provide comments.

8.3 Social and Cultural Framework for Spotted Seatrout Recreational Fisheries

Bob Ditton, is any information available on satisfaction, changing demographics, etc. which could be added to the existing information on fishing subworlds.

Sections 9, 10 11, and 12

Everyone present at the meeting made substantial contributions to these sections, but a few items are still in need of work.

Bob Ditton and **Chuck**, several minor items need input from you. Please draft whatever information you would like to add that is relevant to the section (keeping in mind the title of each section and the material which is reflected).

Section 14

Everyone, references are still missing. Please locate and provide any which are exclusive to your state. **Bob Ditton** and **Chuck**, please provide any references for which only a very brief citation currently exists.

Timetable for Completion

The task force agreed to complete development of the FMP via ground mail, electronic mail, fax, and phone calls. A revised FMP from this meeting will be distributed back to the task force by Friday, December 18, 1998. The timetable for FMP action is as follows:

Final Changes from the Task Force	January 4, 1998
Mail to TCC for review	February 22, 1998
TCC action	March 17, 1998
Revisions back to TCC	April 1999
S-FFMC review	May 1999
Commission review	July 1999

There being no further business, the meeting adjourned Friday, November 20, 1998 at 12:00 noon.

DRAFT

**FLOUNDER TECHNICAL
TASK FORCE MINUTES
December 9-11, 1998
New Orleans, Louisiana**

Chairman Mike Johnson called the meeting to order on Wednesday, December 9, 1998, at 2:18 p.m. The following were in attendance:

Members

Pete Cooper, Jr., Salt Water Sportsman, Buras, LA
Steve Hein, LDWF, Bourg, LA
Rebecca Hensley, TPWD, Corpus Christi, TX
Mike Johnson, FDEP, Marathon, FL
David Ruple, Nature Conservancy, Grand Bay, AL
Mark Van Hoose, ADCNR/MRD, Dauphin Island, AL

Staff

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

Adoption of Agenda

M. Johnson moved to accept the agenda as written, and the agenda was adopted by consensus.

Approval of Minutes

Chairman Johnson asked the group to review minutes of August 17-20, 1998, and then moved to adopt the minutes as written. R. Hensley seconded the motion which passed.

Review of Section Progress

Using the computer projection unit, sections 6, 9, and 10 were reviewed and edited. A revised draft will be mailed back out to the task force by mid-January. The group agreed to finalize the document via phone, fax, E-mail, and mail. The following items are still in need of action:

- Include a definition for "limited access" in the glossary.
- Use "critical" habitat rather than "essential fish habitat."
- Use commercial harvesters and recreational anglers. Do not use fishers.
- Remove figures 6.4 and 6.5 from text since they are being eliminated from the document.
- Steve to check Table 6.2 for Florida's 1997 landings.
- Add phone numbers to the task force list.
- Steve, E-mail Texas' portion of section 6 to B. Hensley.

DRAFT

**FLOUNDER TTF
MINUTES
December 9-11, 1998
Page 2**

- Dave, add 4.9.7 Introductions of Non-native Flora.
- Delete page 6-35 (Table 6?)
- Add 9.5.1 Introduction of Non-native Species.
- Steve, rewrite 10.8 (Cooperative Management Program) per seatrout FMP.
- Mike Johnson, document ghost fishing.
- Chuck Adams, draft a paragraph on import/exports.
- Section 6.1.2.5, add state records to the table.

Timetable Meeting

The revised timetable is as follows:

January 1999	Revised FMP to task force.
January 15, 1999	All assignments complete and to the GSMFC office.
March 1999	Presentation to the TCC by <i>Chairman Mike Johnson</i> .

There being no further business, the meeting adjourned Friday, December 11, 1998, at 11:30 a.m.