

GULF STATES MARINE FISHERIES COMMISSION

St. Petersburg Beach, Florida
Colonial Inn - Upper Lobby
October 20 (Thursday) and October 21 (Friday), 1960

P R O G R A M

(Commission Chairman Hermes Gautier, Presiding)

9:00 AM REGISTRATION

9:30 AM CALL TO ORDER

INVOCATION

Rt. Rev. Patrick J. Trainor, Pastor
St. John's Church
St. Petersburg Beach, Florida

ROLL CALL

WELCOME ADDRESS

J. Robert McClure
First Assistant Attorney General
State of Florida

RECENT DEVELOPMENTS IN THE FIELD OF INTERGOVERNMENTAL COOPERATION
AS REGARDS NATURAL RESOURCES

Herbert L. Wiltsee
Council of State Governments

10:45 AM RECESS

Fifteen Minutes

11:00 AM THE FRUITFUL POSSIBILITIES OF A COOPERATIVE PROGRAM INCLUDING
SPORTSMEN, COMMERCIAL FISHERMEN AND OUTDOOR WRITERS

H. R. Wilber
Florida Wildlife Federation

11:15 AM INTER-AGENCY COOPERATION IN FLORIDA

A. D. Aldrich
Florida Game and Fresh Water
Fish Commission

11:30 AM PANEL: 1959-60 STATE AND FEDERAL RESEARCH ACTIVITIES RESUME -
QUESTIONS AND ANSWERS

Presiding

Walter O. Sheppard
Commission Vice-Chairman

George W. Allen

Ala. Department of Conservation

Robert F. Hutton Clarence P. Idyll	Fla. State Board of Conservation The Marine Laboratory, Univ. of Miami
Lyle S. St. Amant Percy Viosca	La. Wild Life and Fisheries Commission " " " " " "
William J. Demoran	Miss. Marine Conservation Commission
Howard T. Lee	Tex. Game and Fish Commission
George A. Rounsefell	Bureau of Commercial Fisheries
Philip A. Butler	" " " "
Harvey R. Bullis	" " " "
Richard T. Whiteleather	" " " "
Spencer H. Smith	Bureau of Sport Fisheries and Wildlife

12:15 PM RECESS FOR LUNCHEON

AFTERNOON SESSION

1:45 PM MARINE RESOURCE INFORMATION EDUCATION

Howard D. Dodgen
Tex. Game and Fish Commission

2:00 PM PROMOTION OF FLORIDA SEAFOOD

Ernest C. Mitts
Fla. State Board of Conservation

2:15 PM BIOLOGICAL ASPECTS OF THE EXPANDING GULF FISHERY FOR INDUSTRIAL SPECIES (ILLUSTRATED WITH COLORED SLIDES)

Winthrop A. Haskell
Bureau of Commercial Fisheries

2:30 PM PANEL: SHRIMP INDUSTRY ASSOCIATION ACTIVITIES

Presiding	William R. Neblett National Shrimp Congress
Charles W. Bevis	Southeastern Fisheries Association
H. Ray Robinson	Gulf Shrimp Cannery Association
James H. Summersgill	Louisiana Shrimp Association

3:15 PM RECESS

Fifteen Minutes

3:30 PM RESEARCH PLANS OF THE TORTUGAS SHRIMP COMMISSION

Robert M. Ingle
Tortugas Shrimp Commission

3:45 PM IMPLEMENTATION OF THE MARINE SPORT FISHERY ACT OF 1959

Paul E. Thompson
Bureau of Sport Fisheries
and Wildlife

4:00 PM PANEL: COMMISSION COMMITTEE RECOMMENDATIONS

Presiding

Gordon Gunter
Gulf Coast Research Laboratory

Lyle S. St. Amant
Shellfish Committee

La. Wild Life and Fisheries Commission

Howard T. Lee
Committee to Correlate
Research and Exploratory
Data

Tex. Game and Fish Commission

Theodore B. Ford
Estuarine Technical
Coordinating Committee

La. Wild Life and Fisheries Commission

ADJOURNMENT

FRIDAY (OCTOBER 21)

8:30 AM COMMISSION EXECUTIVE SESSION BREAKFAST - CARD ROOM
to
11:30 AM

8:30 Am FIELD TRIP TO THE BAYBORO LABORATORY OF THE FLORIDA STATE BOARD
to OF CONSERVATION
11:00 AM

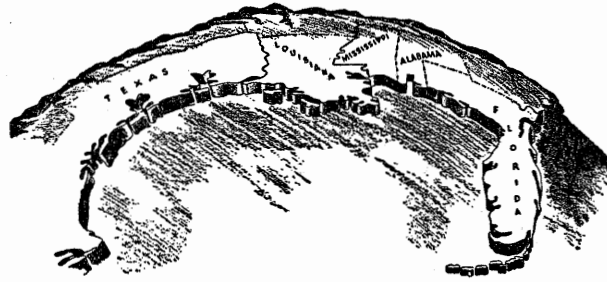
11:40 AM FINAL GENERAL SESSION - UPPER LOBBY

12 NOON ADJOURNMENT

12:30 PM LUNCHEON - FRIED MULLET AND HUSHPUPPIES

HOSTS - FLORIDA STATE BOARD OF CONSERVATION AND
THE SOUTHEASTERN FISHERIES ASSOCIATION

FOLLOWING LUNCHEON - THE GROUP IS INVITED TO VISIT THE BUREAU
OF COMMERCIAL FISHERIES REGIONAL OFFICES
AT THE DON CE SAR FEDERAL CENTER, ST.
PETERSBURG BEACH



Gulf States Marine Fisheries Commission

312 AUDUBON BLDG., NEW ORLEANS 16, LA.

M I N U T E S

REGULAR MEETING

COLONIAL INN

ST. PETERSBURG BEACH, FLORIDA

October 20-21, 1960

GULF STATES MARINE FISHERIES COMMISSION
312 Audubon Building
New Orleans 16, Louisiana

M I N U T E S

REGULAR MEETING, OCTOBER 20-21, 1960
Colonial Inn
St. Petersburg Beach, Florida

OFFICIAL ATTENDANCE OF COMMISSIONERS

	<u>PRESENT</u>	<u>ABSENT</u>
<u>ALABAMA</u>	William C. Younger Will G. Caffey, Jr. W. C. Holmes	
<u>FLORIDA</u>	Ernest C. Mitts Walter O. Sheppard Vern Merritt (10/21/60)	
<u>LOUISIANA</u>	Alvin Dyson	L. D. Young, Jr. A. O. Rappelet
<u>MISSISSIPPI</u>	Hermes Gautier	William G. Simpson Stanford E. Morse, Jr.
<u>TEXAS</u>	Wilson Southwell	Howard D. Dodgen
<u>PROXIES</u>	James N. McConnell Hermes Gautier Howard T. Lee	(For L. D. Young, Jr.) (For Stanford E. Morse, Jr.) (For Howard D. Dodgen)
<u>STAFF</u>	W. Dudley Gunn Secretary-Treasurer	

FORMER COMMISSIONERS PRESENT

Charles W. Bevis

OTHER STATE FISHERIES REPRESENTATIVES PRESENT

George W. Allen, W. J. Demoran, Bonnie Eldred, T. B. Ford, Robert F. Hutton,
Robert M. Ingle, Joseph C. Jacobs, Jack E. Mallory, Andy McEnlean, Ron Phillips,
Lyle S. St. Amant, Percy Viosca, Jr., H. E. Wallace

OTHER REPRESENTATIVES OF STATE GOVERNMENT PRESENT

J. Robert McClure, Herbert L. Wiltsee

FEDERAL GOVERNMENT REPRESENTATIVES PRESENT (U. S. FISH AND WILDLIFE SERVICE)

David V. Aldrich, E. L. Arnold, Harvey R. Bullis, Jr., Philip Butler, T. J. Costello, John B. Glude, Joseph J. Graham, W. A. Haskell, Herb Hunter, Joseph H. Kutkuhn, George A. Rounsefell, Paul E. Thompson, Seton H. Thompson, Fred Watkins, Richard T. Whiteleather

REPRESENTATIVES OF FIRMS CONNECTED WITH THE FISHING INDUSTRY PRESENT

Y. E. Hall, M. K. Lawrenz, John A. Mehos, William R. Neblett, D. S. Peterson,
L. C. Ringhaver, H. R. Robinson, L. W. Strasburger, James H. Summersgill,
J. Roy Duggan

UNIVERSITY REPRESENTATIVES PRESENT

C. P. Idyll, Edward Iverson, Albert C. Jones, K. M. Rae

CLERGY, WILDLIFE FEDERATION AND TRADE JOURNAL REPRESENTATIVES PRESENT

Rt. Rev. Patrick G. Byrne; H. R. Wilber; David B. Lord, J. Brinkley Price

GENERAL SESSION, OCTOBER 20, 1960

Commission Chairman Hermes Gautier called the meeting to order at 9:45 AM and introduced Rt. Rev. Patrick G. Byrne, Pastor, St. John's Church, St. Petersburg Beach, Florida, who rendered the invocation.

Florida First Assistant Attorney General J. Robert McClure welcomed the group most cordially and assured the Commission of the continued cooperation of Attorney General Richard Ervin's office. Copy of his address is herewith first attached.

Herbert L. Wiltsee, Director, Southern Office, Council of State Governments, Atlanta, Georgia, address^{ed} the group on the subject: Recent Inter-governmental Cooperation Developments in the Field of Natural Resources. Copy of Dr. Wiltsee's paper is herewith second attached.

Following a short recess, H. R. Wilber, Executive Secretary, Florida Wildlife Federation, Deland, Florida, was introduced. Copy of the address entitled The Fruitful Possibilities of a Cooperative Program Including Sportsmen, Commercial Fishermen and Outdoor Writers is herewith third attached.

A. D. Aldrich, Director, Florida Game and Fresh Water Fish Commission, was unable to attend the meeting. H. E. Wallace, also of that commission, read the paper Dr. Aldrich had prepared on the subject, Inter-Agency Cooperation in Florida. Copy of this address is herewith fourth attached.

Commission Vice-Chairman Walter O. Sheppard was introduced and presided over a panel arranged for the purpose of hearing questions and answers relative to the 1959-60 State and Federal Gulf Research Activities Resume which was distributed for study several weeks prior to the meeting, and at the meeting proper. Serving on the panel were: George W. Allen, Alabama Department of Conservation; Robert F. Hutton, Florida State Board of Conservation, and Clarence P. Idyll, The Marine Laboratory, University of Miami; Lyle S. Amant and Percy Viosca, Jr., Louisiana Wild Life and Fisheries Commission; Howard T. Lee, Texas Game and Fish Commission; George A. Rounsefell, Philip A. Butler, Harvey R. Bullis, Jr., and Richard T. Whiteleather of the Bureau of Commercial Fisheries; and Herbert Hunter, Bureau of Sport Fisheries and Wildlife. Mr. Allen explained the merits of fall shell planting and mentioned the reef inventory program now underway in Alabama. Dr. Butler said the Gulf Breeze Laboratory had some unpublished data on conch control that might be helpful to such Alabama studies. Mr. Allen explained that the double trawl was not allowed in Mobile Bay because of depriving small shrimpers of a steady catch. He said the shrimp industry favored the ruling.

Dr. Hutton explained the Florida bulkhead law. Dr. Idyll told Dr. St. Amant that the Tortugas shrimp spawning grounds were closer in than had been expected in 10-12 fathoms. He also told of the animal behavior studies, including pink shrimp. Dr. St. Amant answered questions on the Louisiana expanded shell planting program. Chairman Gautier inquired about conchs bothering the seed oysters. Dr. St. Amant said the seed are planted in waters generally free of conchs. Mr. Viosca, speaking with the aid of maps, pointed out the three areas of the Louisiana coast where shrimp were stained in June of this year and indicated where returned shrimp had been taken. Mr. Lee explained to Mr. Allen the Texas law concerning out-of-state shrimp boats licenses. Dr. Rounsefell said more support was needed for statistics. Mr. Whiteleather, answering a question on seafood inspection, mentioned that 23 plants in the area are now under inspection. Mr. Raymond Robinson stressed the need for adequate statistical information. No questions were asked of Messrs Bullis or Hunter because the morning session had run overtime. Senator Sheppard suggested that those gentlemen might be contacted later in the day by anyone having questions.

Starting the afternoon session, Commissioner Southwell was introduced to present a paper on Marine Resource Information Education which had been prepared for presentation by Commissioner Dodgen. Copy of this paper is herewith fifth attached.

Commissioner Mitts, who spoke on the subject, Promotion of Florida Seafood, was next introduced. Following are some points brought out in the talk:

The Florida State Board of Conservation spends about \$20,000 annually for seafood sales promotion, which is used by its home economist, Mrs. Albertson.

In the past year, 156 TV programs of from 15-30 minutes duration were presented and without cost to the Board.

Demonstrations were given at 58 clubs during the year. Five large food shows were staged. Samples of seafood were distributed at 15 Florida fairs, Southeastern Fisheries Association supplying the seafood free of charge. Sarah's Recipes go each week to 15 daily newspapers. A total of 7000 inquiries was received during the year.

Governor Collins proclaimed Seafood Week. Board agents contacted mayors in this promotion.

The Board has sold, for 20¢ each, 2500 auto-license-size metal plates which read Eat Florida Seafood.

The promotion includes visits to restaurants. The Bureau of Commercial Fisheries was praised for the seafood sales effort being made in Florida.

Biological Aspects of the Expanding Gulf Fishery for Industrial Species (illustrated with colored slides), was the subject of a paper presented by Winthrop A. Haskell, of the Bureau of Commercial Fisheries. Copy of this paper is herewith sixth attached.

William R. Neblett, National Shrimp Congress, presided over a panel of shrimp industry association directors who assembled to tell of the associations' activities during the past year. Representing the Southeastern Fisheries Association was Charles W. Bevis. H. Raymond Robinson spoke for the Gulf Shrimp Cannery Association. The Louisiana Shrimp Association was represented by James H. Summersgill, while John A. Mehos reported on work of the Texas Shrimp Association. Memos on the several reports follow:

Mr. Neblett (National Shrimp Congress).

The National Shrimp Congress was formed in the Fall of 1956 as a non-profit corporation (trade association) to represent the shrimp industry in matters of national and international significance. Its board of directors is composed of prominent persons in the shrimp industry selected and certified by the Texas Shrimp Association, the Louisiana Shrimp Association and Southeastern Fisheries Association, and its financial support comes principally from these three organizations, although occasionally contributions are received from other areas in the shrimp industry interested in advancing the same objectives.

Liaison is maintained with leaders of other important U. S. fisheries; tuna, salmon, halibut, the New England fisheries, etc., and also with the Department of State, Department of the Interior (Bureau of Commercial Fisheries) and other government bureaus and agencies immediately or temporarily concerned with fisheries.

Representation is primarily of the producer, the fisherman, but membership also includes processors, suppliers, insurers and other interested in or affected by the health of the industry.

The National Shrimp Congress has given vital and necessary representation to industry at two important United Nations conferences on Law of the Sea, as advisors to our own State Department. At the recent 1960 conference (March-April) in Geneva, where the United States lost its fight for acceptance of a narrow territorial sea, fisheries, including the shrimp fishery, were to be the sacrificial lambs laid upon the altar, but survived the crisis. Crucial moments occurred in the 1958 Conference, where other nations sought to attach shrimp to the Continental Shelf, and where the first, historic, world-wide Fisheries Convention was agreed to.

The first fishery treaty to deal exclusively with shrimp was the agreement between the United States and Cuba, affecting the Florida "Tortugas Shrimp Fishery". Although this treaty has been ratified by both nations, present conditions in Cuba have prevented its implementation. The National Shrimp Congress, through its Executive Director, testifies before Congressional Committees, and presents the viewpoint of industry on matters such as these. The Congress is anxious to learn how industry feels about such matters.

The National Shrimp Congress maintains a watchful eye upon our relations with competitive foreign countries, especially when their production makes inroads upon the domestic market and causes hardship to our own producers and processors. Through a Legislative Steering Committee, composed of members within the Congress, and also persons from related enterprises, such as shrimp canning, breeding, etc., a unified team effort is made at the national level to coordinate and advance industry objectives in both the legislative and executive branches of national government. The critical depression year of 1959 in the shrimp industry was principally the result of unrestricted imports from more than fifty countries, which, if continued in the ratio in which they were proceeding, would have doomed the domestic fisherman and seriously affected the American processor. Through strenuous legislative efforts, industry has put a finger in the dam. Washington is being "educated" in the needs and requirements of the shrimp industry. Hearings were held before the Tariff Commission last March, and supplementary hearings will be held again on January 9, 1961. The natural adversaries of our position have perceived the strength of our effort, and while we have not yet achieved the enactment into law of protective legislation, we have Congressional leaders committed to help us; we have slowed down both governmental and private capital going abroad to increase imports; and we have earned the respect of both legislative and executive areas by being factual, responsible, and, principally, by being united and speaking for industry with one voice.

The National Shrimp Congress has attempted to assist in the coordination of State and Federal research on shrimp, to avoid duplication of effort, and to promote research and conservation by trying to increase the funds available for this purpose. The older, established fisheries have long been expert in this field. Shrimp is a newcomer, but a giant one because so many states are concerned with this valuable natural resource. Again, the unity of effort is an important one; meetings and discussions of industry, scientists and legislators lead to concrete, practical and purposeful programs, which have undeniable merit. This organization, the Gulf States Marine Fisheries Commission, can take great pride in this program, as the shrimp industry's first major effort along these lines began about two years ago, at a meeting of the Gulf States Marine Fisheries Commission in Biloxi.

Mr. Bevis (Southeastern Fisheries Association)

Southeastern Fisheries Association has had a busy year. Our activities have spread throughout the South Atlantic states and of course, our affiliations and activities with the Gulf States are well known.

Much interest has been shown in a proposed law to create a Florida Seafood Commission. The proposal would establish an eleven man commission, composed of seafood industry members, appointed by the Governor in staggered terms and representing all phases of the Florida seafood industry. Among other duties the commission would provide a marketing and promotion program for our products,

paid for by industry tax and at the present market value would provide an estimated \$1,500,000.00 for advertising and promoting Florida seafoods.

The proposed law would create an inspection program, pointed toward guaranteeing the best of quality and quality controls.

The commission would be patterned after the Florida Citrus Commission that has done so much for Florida citrus. Some of us feel that this will be the greatest step forward in the history of the seafood business in Florida.

Worthy of mention is the fact that this year our participation in the per box contribution on shrimp has more than doubled. We recognize that landings have shown some increase but most of the increase has come from more boats participating in the program than ever before. This is a sign of growth and interest in the shrimp industry and we are encouraged to the point of having hopes of all our industry participating.

Two meetings have been held in an effort to work out a shrimp conservation program for the South Atlantic States, North Carolina, South Carolina, Georgia and Florida. Much interest has been shown and we hope that some final plans will be agreed upon on October 28 when we will have another four Atlantic States meeting in St. Simons Island, Georgia. There seems to be a growing interest in conservation throughout the Gulf and South Atlantic States and Southeastern is making every effort to help coordinate and actively participate in this program.

The Association has actively supported the fine work of National Shrimp Congress whose primary interest is imports and quotas, wage and hour and the international law of the sea. We believe these interests to be of utmost importance to the industry.

Our Association thinks that marketing and promotion of our products is vital to the well being of our industry. We have cooperated to the fullest extent with the Bureau of Commercial Fisheries marketing program as well as with the Shrimp Association of the Americas and National Fisheries Institute programs. We also have stepped up our own program and are attempting to emphasize this work more and more. We all realize that our per capita consumption of seafood is shamefully low and we hope to do something about it. Hand in hand with such a program goes quality and we propose to produce the finest.

In summary let us say that the offensive program of Southeastern Fisheries Association is:

1. Conservation
2. Marketing and Promotion
3. Organization

Our defensive program:

1. Pollution
2. Fills and Bulkheads
3. Restrictions

The field of play is research and exploitation of a sound, practical and applicable nature coupled with a long range program that will show us the way.

Mr. Robinson (Gulf Shrimp Cannery Association)

- 1 - FEDERAL LEGISLATION TO ORDERLY REGULATE IMPORTS OF SHRIMP. In this field we worked with other segments of the domestic Shrimp Industry. A special contribution was a Public Relations firm whose duty was to keep in constant touch with the entire subject and take whatever steps were necessary to insure passage.
- 2 - OTHER FEDERAL LEGISLATION - kept a close eye on same. In some instances the objectives of the Cannery differed with those of other segments of the Shrimp Industry, such as in the field of Wage and Hour legislation.
- 3 - PURELY LOCAL MATTERS - including state legislation and such things as sponsorship of Scholarship at Louisiana State University along with other parties including Menhaden Industry, Louisiana Shrimp Association, and Oyster Growers & Dealers Association.
- 4 - INTERNATIONAL - through National Cannery Association had representation at the Law of the Sea Conference in Geneva.
- 5 - ADVERTISING & PROMOTIONAL WORK - have been pushing with all vigor possible in this field. Serious discussions re again initiating Industry advertising program.
- 6 - RESEARCH & PRODUCT IMPROVEMENT WORK - a number of programs have been initiated as follows:
 - Sanitation survey of cannery by National Cannery Association - as well as cooperation on Processing Survey underway on national level
 - Product improvement through research - a three year history of activity with some projects near completion while others in various stages of study. Both at local level and through National Cannery Association.
- 7 - MISCELLANEOUS ACTIVITIES - as they come up.

Mr. Summersgill (Louisiana Shrimp Association)

The Louisiana Shrimp Association is two years old to-day (10/20/60). Our staff is composed of five vice-president-Conservation, Legislation, Membership, Education, Enforcement, and Publicity. We have a Board of Directors. Each member is chosen from the main producing (shrimp) areas of the state.

The membership of the Louisiana Shrimp Association is representative of the shrimp industry, being composed of producers (fishermen), suppliers, processors, financial institution representatives, sales groups, brokers, and shrimp shed operators. Also business and professional men who are not directly connected with the industry but interested in its welfare.

I would like to say a little something about Louisiana's new shrimp law which was enacted in 1958. First, may I say that we are champions of this law and are fighting to keep it intact. This law was formulated by the Legislators, Louisiana Wild Life and Fisheries Commission, commercial interests and all sportsman's groups. We feel the improvement in our shrimp catch is due largely to the conservation features of this law. These features are: Shortened the open season in inside waters by more than 2½ months; moved dividing line between inside and

outside waters three miles into the Gulf from shoreline, with the temporary exception of the Cameron Parish area where the dividing line is still the shore. (This concession was made to the people of Cameron Parish because of the damage they suffered from hurricane Audrey); restricted trawlers to the use of one net in inside waters, not to exceed 50 feet in length; provided sufficient penalties to deter violations (this we refer to as the "teeth" in the law); last but not least, during closed seasons no nets of any kind are allowed to be used in inside waters. This last provision leaves our nursery grounds undisturbed during the critical period of the small shrimp's growth.

Since the enactment of our new law, numerous attempts have been made to change certain provisions thereof. None of these proposed changes have been in the interest of conservation so the Louisiana Shrimp Association has strongly opposed them.

Our law is a good one. The economic conditions within our industry are improving year after year. From third place in the Nation's shrimp production in 1957, we are now a strong second and our chances are good to again be number one by the end of the year.

Mr. Mehos (Texas Shrimp Association)

In its ten years of existence the Texas Shrimp Association has engaged in a great number of activities on behalf of the shrimp industry both on a local basis in the State of Texas and on a national and international basis in conjunction with other shrimp and fish associations.

Its more recent and most important activities have been in the field of conservation and in the international area regarding the imports problem and the Law of the Sea.

As a member of the National Shrimp Congress the Texas Shrimp Association strongly supported and assisted the Congress in seeking solution to the problem of the Law of the Sea internationally.

Again as a member of the Congress the Association endorsed and strongly supports the efforts of the Congress to obtain remedial legislation on the shrimp imports problem,

In early 1959 the Texas Shrimp Association sponsored a comprehensive shrimp conservation act in the Texas Legislature, and largely through its efforts the act became law. The main features of the law included closing of the bays in the spring and the Texas Gulf waters for forty-five days in June and part of July to protect the small brown shrimp. The Texas shrimp industry feels that the new law was a contributing factor in the excellent production of shrimp on the Texas coast during the two seasons immediately following the effective date of the law.

We feel the time has come for the five Gulf states to work closely together in order to achieve more effective conservation of shrimp in the Gulf of Mexico. Because of the difference in conditions existing in the shrimp fisheries of the Gulf states, a single over-all formula for shrimp conservation would not only be unworkable but impractical. The timing of periods for closed seasons would vary with geographical locations and species of shrimp. There is needed, however, reciprocity and cooperation between the states of the Gulf in matters of shrimp

conservation. This need is becoming more apparent each year as it becomes common practice for boats of one state to fish in the waters offshore another.

Any restrictive regulations applicable to the fishermen of one state, such as the temporary prohibition of fishing in certain offshore areas, should be applicable to fishermen from other states as well. It is pretty well established that such closures are becoming more necessary each year, particularly in the brown shrimp fishery off the Texas coast. It is further felt that such closed areas need to extend seaward beyond state jurisdictional boundaries to adequately accomplish the protection aim intended.

The five Gulf states, through their respective legislatures, could pass reciprocal legislation making the conservation laws of all Gulf states applicable to their own citizens. Certainly, if the shrimp industry of any given state is willing to restrict its offshore shrimp fishing activity for conservation reasons, the fishermen of neighbor states should be willing to do likewise, for they will all share in the results of such a program.

The Texas Shrimp Association recognizes and commends the excellent efforts of the many biologists and agencies currently working on the shrimp problem, as well as the fine efforts and activities of the Gulf States Marine Fisheries Commission.

Chairman Gautier remarked: "The Association Directors, and others of the shrimp industry, have certainly been faithful in their attendance at meetings of this Commission, and we want you to know that it is appreciated. We know that these associations have been beneficial to both your people and our people and we feel that much will be accomplished in the years ahead as we continue to work together for the long run good of the shrimp fishery."

Research Plans of the Tortugas Shrimp Commission was presented by one of the three American commissioners on that body, Robert M. Ingle of the Florida State Board of Conservation. Copy of the paper is herewith seventh attached.

Speaking on the subject of Implementation of the Marine Sport Fishery Act of 1959 was Paul E. Thompson, Bureau of Sport Fisheries and Wildlife, Washington, D. C. Copy of the address is herewith eighth attached.

The Chairman stated that, while the scientific committees had not met since the spring Commission session, thoughts had been exchanged through the mails and doubtless some recommendations would be forthcoming from the committee members, who were introduced at this time; for the Shellfish Committee, Lyle S. St. Amant, Louisiana Wild Life and Fisheries Commission; for the Committee to Correlate Research and Exploratory Data, Howard T. Lee, Texas Game and Fish Commission; and for the Estuarine Technical Coordinating Committee, Theodore B. Ford, Louisiana Wild Life and Fisheries Commission

Following are committee reports:

Dr. St. Amant (Shellfish Committee)

All member states were polled by mail to determine their progress of research and management activities. Replies or information were received from all states. The following report will summarize the present work going on in the Gulf area and proposed work suggested by the various investigators.

Alabama. Alabama has instituted a cultch planting program in the Mobile Bay area. The significance of this planting is that the cultch was planted in the fall of 1959 to take advantage of the fall set. It is believed that fall set spat will survive predation better, then should survive the next summer without D. marimum mortalities. If this is the case, market size oysters will be available at 18 to 20 months of age during the second winter and spring oyster setting. (Authors note - experiments of this type were carried out in cages in Louisiana in 1957-58 using spring and fall spat. Mortalities from D. marimum occurred during the first summer in fall set seed when placed in highly saline areas - predation damage should be reduced by this method, however.)

Florida. A total of 250,000 bushels of shell was planted in Apalachicola Bay and 72,000 bushels in Choctawhatchee Bay. A pilot planting of seed oysters was made in Wakulla County for demonstration and to encourage private activities.

Louisiana. Louisiana has completed its comparative studies of Louisiana and South Carolina oysters. It was hoped that some evidence of resistance to D. marimum would be detected in the South Carolina stock. This was not the case. Mortalities by late summer and early fall were heavy. A difference in mortality was noted in that the Louisiana oysters survived well until August. The net result, however, was a loss in both cases of 60% to 70%.

Other studies in Louisiana include continued work on oil pollution with relation to taste, effects of dredging and silting in the coastal environment, setting peaks of snails and oysters and food preference of oyster drills.

Again in 1960, 1,050,000 bushels of mud shells were planted for cultch. Initial set was from 80% to 85%. Dredging of last years planting began September 1, 1960 and all indications are that the seed oyster crop resulting from this planting and the closure of Black Bay is the best in years.

A new oyster law was enacted during the last meeting of the legislature. It is now mandatory that all oyster leases be recorded in the court-house of the parishes (counties) in which the lease is located.

Texas. Has a great increase in mud shell production since 1953. This has increased revenues but also problems where dredging is occurring in areas of live oysters. Shell dredging companies are required to re-shell areas of the same acreage when submarginal live oyster reefs are destroyed. And all live oysters are first moved at no cost to the state. A cultch planting program aimed at establishing new public beds is now in effect. In this work a six to eighteen inch bed of shells is laid down.

A coast wide study of Dermocystidium was made in Texas. All bays were found to be infected with the fungus but Aransas and Galveston Bays had a high incidence of infection.

As in Louisiana, industrial development and expansion is creating many problems on the Texas coast. Studies of proposed construction are made and approved or disapproved through the U.S. Corps of Engineer.

Texas anticipates a revision of all oyster laws in the near future and is planning studies of recently dredged areas as oyster areas. Mr. Lee also suggests attempting to develop a D. marimum resistant strain of oysters.

Mississippi. Except for planting of shells returned from the local factories, little work is being done by the state of Mississippi.

Mr. Lee (Committee to Correlate Research and Exploratory Data)

Some six years ago one of our colleagues prepared a chart which portrayed our state of knowledge with respect to certain Gulf of Mexico fishes. During the following years each of the Gulf States and the Federal government expended considerable sums in an effort to enlarge our knowledge of those forms and others and in the management of some of them. As in any undertaking it is easier to know where you're going if you know where you've been. So we probably should see where we've been in the past six years if we are to continue into the future.

In an effort to plot the degree of advancement of the years between 1954 and 1960 the chart was duplicated and distributed to many workers who were presumed to have some knowledge of such achievements. In addition to showing the state of knowledge as measured in the first effort, a blank space for each factor was allowed so that a present day evaluation could be made. You have been provided with copies of the comparison chart which resulted from this unusual balloting. I think the results are worth considering.

You will note that there are 135 opportunities to indicate the 1960 status. Only six elicited no response at all and all of these are in the column headed "Natural Mortality". In the remainder there were 29 progressions indicated and 3 regressions. Thus we see that in 97 instances no change was derived. The greatest number of changes was noted equally in "Fishing Mortality" and "Statistics".

For the forms studied most significant advances were credited to mullet with menhaden, spotted sea trout, and redfish in a three way tie for second. Oddly enough the blue crab knowledge suffered a couple of setbacks after having been out a bit ahead of all of the fin fishes in overall knowledge.

Where then have we been? Certainly none of us would admit that we haven't been busy but perhaps some have been busier than others. The direct relationship between Fishing Mortality rates and Statistical knowledge can be seen from the chart. This has resulted from an intensive program of statistical reporting led by the Bureau of Commercial Fisheries and indicates that with concerted effort appreciable results can be obtained.

However, in the column headed "Natural Mortality" only five forms received any response. Have we not even held our own in the others? In those cases where no knowledge was available in 1954 we seem now to be unsure that we know nothing. In this case our modesty seems unbecoming.

Identity of Stocks and Migrations have obviously had increased attention. Yet there is much to be learned along both lines.

Supposedly all of the factors mentioned for the species listed are important. Certainly these things must be partially understood if management is to be based on factual evidence rather than simple opinion.

Some of you will no doubt say that the advances of the past six years seem to be considerable when we think about the years of work that preceeded the 1954 evaluation. Certainly at that time there were more instances in which we indicated no knowledge as available. And too, quite a few years of study had elapsed in place of a short six years. So in all probability our rate of increase has been adequate.

Recently we have become aware of the potential threat to fishery areas by developments not directly related to any fishing activity. This is evidenced by the establishment in this body of a special committee to study estuarine problems. Certainly now we have more knowledge about the forms which utilize our bays and the habitat conditions required by them. Since it is only in these areas that we can exercise any but harvest controls, I believe that the emphasis should be placed on estuarine studies.

All of us are aware of the increasing interest in boating and fishing activities by a public that each year finds itself with more leisure time, easier financing of boats and motors and greatest tensions which require recreational release. Coupled with industrial demands and transportation of both raw material and finished product the uses to which our bays are subjected are increasing daily.

A recent survey in the Corpus Christi area of Texas showed that each of some 228 thousand acres had a value of \$370.18 per year. This was derived by itemizing each of several uses with this general breakdown:

Recreational uses	\$151.61
Commercial Fishing	14.64
Mineral Production	129.49
Cooling Water	9.64
Transportation	63.71
Effluent Disposal	1.08
Total	\$370.18

For the entire area a yearly value of \$84,594,070.80 was obtained. (Sources: Marine Resources of the Corpus Christi Area. Arvid A. Anderson, Research Monograph No. 21, Bureau of Business Research, The University of Texas, Austin, 1960.) (Cost \$1.50 per copy - 49 pages.)

Increasing demands by each of the interests listed will create more conflicts and increase each value. With this booming development how long can the bays sustain these demands? Certainly not very long in the present proportions.

These facts are brought out here to emphasize again the need for an enlarged and well planned program designed to increase our knowledge not only of the forms listed on the chart discussed at first but of the entire complex of marine organisms in their environment.

For years some have held that fishing pressure was a major cause of variation in abundance. It is my contention that environmental changes resulting largely from mans activity will in the long run have much more effect on this item. On that basis I would urge a re-evaluation of existing programs to consider whether they are producing the required results and a re-alignment of those programs found wanting.

In addition some action by the Commission proper requesting full consideration of fishery values by various governing bodies should be made. We have heard an earlier speaker discuss Marine Resource Information Education. It is suggested that once we have educated ourselves we undertake to educate others. It is essential not only that we promote utilization and expand to other fisheries but that we attempt to perpetuate those we have today.

Dr. Ford (Estuarine Technical Coordinating Committee)

1. Supplement 1 dated October, 1960, to the Annotated Bibliography of Unpublished Estuarine Research by Dr. Philip A. Butler, Editor, was recently completed. These have been distributed by the secretary-treasurer, Mr. W. D. Gunn.

2. The Sub-Committee on Insecticides of the Estuarine Technical Coordinating Committee comprised of Mr. I. B. Byrd, Chairman, Dr. Lyle St. Amant, Dr. Gordon Gunter and Dr. George Rounsefell, have considered the influence of insecticides on estuarine areas. Mr. Byrd had planned to report on the activities of this group, but was unable to attend this meeting. It appears to be the general consensus of opinion of this group that there is little to report at this time. Furthermore, it is felt that it is a problem which should be considered and studied in the future. Thus far, there has been little study of this problem and its many aspects on the productivity, carrying capacity, etc., of estuarine waters. There is some evidence which demonstrates that various heavy carbon insecticides are toxic to marine animals just as these chemicals are toxic to freshwater and terrestrial animals. A published report of Drs. W. Harrington, Jr. and William L. Bidlingmayer, 1958, entitled "Effects of Dieldrin on Fishes and Invertebrates of Salt Marshes," Journal of Wildlife Management, 22 (1): 76-82, documents a substantial fish kill in the tidal marshes of the east coast of Florida. Currently, Dr. Philip Butler is conducting work at the Gulf Breeze Laboratory and other work is being conducted at the Milford Laboratory. Thus, in my opinion, it would be the recommendation of the Sub-Committee that no action be taken by the Commission on the request received by it at the Mobile meeting last spring until sufficient ^{scientific} evidence is available to support a recommendation pertaining to estuarine waters.

3. Copies of the estuarine charts prepared by the various Gulf coast states were sent to Dr. K. M. (Peter) Rae in early August to determine the feasibility of preparing them in atlas form which can be duplicated and distributed to interested workers and members of the Commission. *

4. It is recommended to the various states that serious consideration be given to the preparation of proposed projects for consideration by the estuarine committee and subsequent referral to the Gulf States Marine Fisheries Commission of all approved projects. In this connection a tentative meeting of the Estuarine Technical Coordinating Committee for the purpose of reviewing any such projects is suggested for the week of February 6, 1961. This would permit four to six weeks for reviewing suggestions by the committee prior to the next meeting of the Commission at which approved projects would be proposed for its consideration. Accordingly, it is suggested that the states distribute to each member of the Estuarine Committee a copy of its proposed projects prior to the February committee meeting so that they can be reviewed in advance.

5. The suggested form "Estuarine Program, Preliminary Project Statement, Proposed Investigations," was approved by the Commission with the following amendments: on line 3 following the date, April 11, 1958, insert "As amended March 17, 1960," and that the state and project must be specified in the upper right hand corner on each sheet of the PPS.

* Work has been initiated and reproduction details will be resolved during this meeting.

No response was heard on a call for other matters to be presented. The Chairman thanked the session's speakers for their fine addresses and reports, and the other guests for their manifested keen interest in the proceedings through their participation in the discussion periods.

It was announced that a Louisiana Wild Life and Fisheries Commission sound and colored motion picture, The Louisiana Oyster Fisherman, would be shown in the Upper Lobby at 8:00 PM.

The meeting was adjourned at 5:15 PM.

Friday (October 21)

The Commission Executive Session began at 8:30 AM with the serving of breakfast in the Card Room of the Colonial Inn.

Other guests at the meeting were hosted by the State Board of Conservation to a field trip including the Board's marine laboratory at Bayboro Harbor, St. Petersburg.

At 12 Noon, the Commissioners and their guests left the Colonial Inn to attend a seafood luncheon at the Pass-a-Grill Civic Center, at which beach location the Florida State Board of Conservation and the Southeastern Fisheries Association were hosts. All present were reminded that National Seafood Week was in progress as delectable and generous servings of stone crab claws, shrimp and mullet were made available.

Following luncheon, a number availed themselves of an invitation to visit the Bureau of Commercial Fisheries regional offices and laboratory at the Don Ce Sar Federal Center, St. Petersburg Beach.

The following are notes from the Commission Executive Session of the morning of October 21, 1960: One resolution requests the Bureau of Commercial Fisheries to extend its exploratory effort to the shoreline of the Gulf in search for stocks of blue crabs, stone crabs, callico scallops, bay scallops and clams. A second resolution asks the Bureau to broaden the Gulf Shrimp Biological Program and to make available such statistical data as the additional studies may yield. A third resolution expresses opposition to any fishery law of member states that unreasonably restricts the time or manner of obtaining such licenses. A fourth resolution inquires into jurisdiction over interstate compacts. Tabled until the next regular meeting was a resolution which would designate the Commission as an institution suitable, capable and willing to accept funds for the development of marketing and promotion of commercial salt water animals, and requests that Saltonstall-Kennedy funds be made available for that purpose. Another resolution resulted in a committee being appointed to study the possibility of reciprocal Acts looking toward the elimination of check-out controls of the fishery products of member states.

New Orleans was selected for the October 19-20, 1961 Commission meeting.

Officers elected for the year 1960-61:

Walter O. Sheppard (Chairman)
Fort Myers
Florida

L. D. Young, Jr. (Vice-Chairman)
New Orleans
Louisiana

Prepared by: W. Dudley Gunn
Secretary-Treasurer

COMPARISON OF STATE OF KNOWLEDGE - GULF OF MEXICO FISHES
(1954 and 1960)

Species	Migrations	Identity of Stocks	Growth Rate	Mortality Rates		Spawning Habits	Reproduction No. of Eggs Deposited	Other Causes of Abundance Change			State of Statistics	
				Natural	Fishing			Variations in Survival	Environmental Changes	Predators - Competitors		Artificial Changes
MENHADEN	1 2	2 3	2 2	1	1 3	2 2	1 1	1 1	1 1	2 2	2 3	
MULLET	2 3	2 4	3 3	1 2	2 3	3 3	2 2	2 2	1 2	2 2	3 3	
RED SNAPPER	1 1	1 2	1 1	1	1 1	1 1	1 1	1 1	1 1	1 1	2 3	
SPOTTED SEA TROUT	1 3	1 2	3 3	1 1	1 3	3 3	3 3	1 1	2 2	2 2	2 3	
SPANISH MACKEREL	1 1	1 1	2 2	1 1	1 3	2 2	2 2	1 1	1 1	1 1	2 3	
GROUPEr	1 1	1 1	2 2	1	1 2	2 2	1 1	1 1	1 1	1 1	2 3	
RED DRUM OR REDFISH	1 2	1 1	2 3	1	1 2	3 3	2 2	1 1	1 1	1 1	2 3	
POMPANO	1 1	1 1	2 2	1	1 3	2 2	2 2	1 1	1 1	1 1	2 3	
SPINY LOBSTER	2 2	4 4	4 4	2 2	2 2	4 4	4 4	2 2	2 2	3 3	2 2	3 3
SHRIMP	3 4	4 4	4 3	2 2	3 3	4 4	4 3	3 2	3 3	2 2	3 3	2 4
OYSTER		4 4	5 5	4 4	3 4	5 5	3 3	3 3	3 3	4 4	2 4	3 3
BLUE CRAB	2 2	2 2	4 4	2	2 2	3 3	3 3	2 1	2 2	2 1	2 2	3 3

SCALE OF KNOWLEDGE

1 None	2	3	4	5 Much
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DATE

(1954)	(1960)
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GULF STATES MARINE FISHERIES COMMISSION
St. Petersburg Beach, Florida
Colonial Inn
October 20-21, 1960

"WELCOME ADDRESS"

J. Robert McClure
First Assistant Attorney General
State of Florida
Tallahassee, Florida

Mr. Chairman, Rev. Father Byrne, Distinguished Guests, Ladies and Gentlemen:

It is a great pleasure to be here representing Attorney General Richard Ervin of Florida and to have the opportunity of meeting with representatives of both Government and the fishing industry, with whom I have a mutual interest in the preservation and utilization of our marine resources.

Attorney General Ervin, who shares your interest and concern for promotion and protection of our fishing industry in the Gulf of Mexico, asked me to express his regrets in not being able to be here with you today and to extend his warm personal greetings to all those in attendance with best wishes for a most successful meeting.

It is indeed a treat for me to be with you and to extend to all of you on behalf of the State of Florida a cordial welcome to the 11th Annual Session of the Gulf States Marine Fisheries Commission.

I am delighted to welcome legislators and representatives of industry and representatives of Government from the Gulf States as well as from other states.

I also am pleased to welcome the many people from Washington representing the U.S. Fish and Wildlife Service and other departments of our Federal Government.

In fact, after looking over this audience of experts in the field of fisheries, I feel very much like the father who thought that his son should be told something about the "facts of life." Although it took considerable courage, the father finally invited the boy into the living room after dinner and after some hesitation he said, "Son, I should like to discuss with you some of the facts of life" to which the boy promptly replied, "Father, that is fine, what would 'you' like to know?"

However, I feel that it is only fitting and proper that special tribute should be paid to some of those whom I personally know have contributed to the success of the Gulf States Marine Fisheries Commission through the eleven years of its existence. Among the living and those present, we shall always remember the untiring efforts of Herb Wiltsee, of the Council of State Governments, who furnished the "know-how" and who master minded the creation of this much needed Commission. I know, Herb, how proud you must feel to see the fruits of your labor.

(McClure #2)

To your Secretary, Dudley Gunn, I want to say, "Congratulations for a job well done." Dudley has fought a good fight; he has kept the faith placed in him eleven years ago, and I know you join with me in expressing gratitude for his dedicated and effective service.

This Commission has been blessed with many outstanding and capable men who have served as its Chairman. Among them are:

Bert Thomas of Mobile, Alabama, who did a splendid job as the first Chairman.

Howard Dodgen of Texas, due to his capabilities as an administrator of the Fisheries and Game Department of Texas, has contributed his ability and experience to the success of the Commission.

David Jones of Florida, whose legislative experience as well as his friendly and dynamic personality served as a very able Chairman.

Another of your fine Chairmen was E. J. (Lionel) Grizzaffi who contributed much to the Commission due to his many years in the Louisiana House of Representatives.

With the election of W. C. (Buddy) Holmes of Alabama to the Chairmanship, the Commission had for a year the devoted services of a dedicated practicing physician.

Your present Chairman, Hermes Gautier, has contributed unselfishly of his ability, money and unusual reserve of physical energy to the development of the fisheries of the Gulf. He has truly given his fullest measure of devotion to the cause not only as Chairman for several terms, but as a State Senator, businessman and the good citizen that he is.

There is one other former member of this Commission who was elected Chairman, but death claimed this great friend of the fishing industry before he had an opportunity to serve as Chairman of the Commission, which he had helped to create and served as a faithful member from its inception. I refer to my good friend, Bill Henry.

Besides the many others that have served well and honorably as members of the Commission, I do not know of any other single agency that has had the help and council of so many qualified people such as those who have conducted extensive fishery research programs, while others served on your advisory committees.

In the field of research, I want to pay the highest tribute to the U. S. Fish and Wildlife Service for the special attention it is focusing on the Gulf Fisheries.

To further mention those that, through the years, even before this Commission was formed, have rendered a valuable service to our fisheries, I feel that I must pay special tribute to Dr. F. G. Walton Smith and his fine staff in the Marine Laboratory of the University of Miami.

We are also justly proud of all the other Universities and research agencies, contributing to our knowledge of marine life, not only those in the State of Florida but those of the other states.

(McClure #3)

On your Biological Advisory Committee, you have had many outstanding marine scientists (too numerous to name all of them). However, I do want to pay respect to one which I am sure I will never forget as will no one that ever met him. I refer to the late Dr. Nelson Gowanloch of New Orleans, Louisiana.

Your legal advisory committee, which is composed of the attorney from each state, who usually serves as the legal advisor to the salt water fisheries department of each state has been a great asset to the Commission and deserves recognition. Of the original members, two have been lost by death -- Erma Baker of Texas and Reese Bickerstaff of Mississippi.

Then the one and only Gus Harris of Alabama will long be remembered not only for his wit and friendly personality but for his labors far beyond the call of duty in working with Herb Wiltsee and others to bring the Commission into being.

The last of the original members of the legal committee is Assistant Attorney General Mary Schulman, member from Florida, who served on the Committee from 1949 to 1957.

Therefore, as you can see, the present status of the Gulf States Marine Fisheries Commission may be properly called the product of cooperative effort among many groups, representing many different ideas and aims.

This is truly a Commission that seeks to bind together the fishing industry, scientists, lawyers, Government administrators and agencies of the states and nation--all pooling their efforts to solve the mysteries of the deep and moving sea.

The Commission further seeks to provide a forum for the exchange of information and the discussion of the problems concerning the fisheries of the Gulf of Mexico. In many ways these fisheries differ widely from those of the north-eastern and western fishing centers of the United States.

Here in the Gulf and beneath the warm tropic waters exists a world of wonders about which so little is known. Here is the last frontier of marine science, and we have unusual advantages in attempting to cross this last frontier.

Cooperation between states is one device that can be successfully used to solve these mutual problems. You have used this device most effectively in the establishment of the Gulf States Marine Fisheries Commission. You have used this method of gaining cooperation and breaking down barriers thoughtfully.

It is therefore a pleasure to meet with you and observe this fine example of state governments and industry in action. It is pleasing to see how representatives of an industry and representatives of government can and do get along together in solving our fisher problems.

I welcome you with the feeling that this is indeed the locale of the conscience of all citizens who are truly interested in the nation's fisheries. I feel that in such a forum we find the balance between expediency, whether economic or political, and long range social benefits.

(McClure #4)

In this forum dedicated to conservation, you and I both hope to speak to a public which is wider than that in actual attendance here today.

With the assistance of the conservation bodies of the states and nations that are represented here together with industry and the understanding and cooperation of our fellow citizens, I am sure that the future of the fisheries will not be a static or liquidating operation but that you will continue to demonstrate that the cooperation and work that you started eleven years ago when this Commission was formed will never come to an end but that it will continue to grow and improve day after day. And lest, I begin to sound like General Alexander Smythe of Virginia, a member of the early American Congress, who was a very studious man, but a very laborious speaker and often worried the House with prolonged speeches. One day in particular, he was being very tedious and turning to Mr. Henry Clay said, "Sir, you speak for the present generation; but I speak for posterity." Henry Clay, without smiling retorted, "yes, and you seem resolved to speak until the arrival of your audience."

Again let me say how pleased we are to have all of you meet here with us in Florida, the land of orange groves, healthful sunshine, Gulf ocean breezes, where I am sure you will find plenty of southern hospitality always awaiting you, plus a friendly progressive governmental climate made up of officials ever seeking new ways to develop Florida's resources including the all important seafood industry which means \$29,000,000 annually to our economy.

To those of you who are citizens of Florida, thanks for bringing this meeting here and for your economic, scientific and cultural contribution to our State.

To those of you who come from sister states, thanks for coming and sharing with us your knowledge and experiences. We hope you will have an enjoyable visit and that you will return again and again to grace us with your presence.

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GULF STATES MARINE FISHERIES COMMISSION
St. Petersburg Beach
Colonial Inn
October 20-21, 1960

"RECENT INTERGOVERNMENTAL COOPERATION DEVELOP-
MENTS IN THE FIELD OF NATURAL RESOURCES"

Herbert L. Wiltsee, Director
Southern Office
The Council of State Governments
Atlanta, Georgia

I appreciate this opportunity of meeting with you again, the more so since I was forced to make last minute apologies and to be absent from your meeting in Mobile earlier this year. At that time, I asked Dudley Gunn not only for his forgiveness but also for a raincheck -- and he was good enough to indulge me in both requests.

The last time I participated in a meeting of the Gulf States Marine Fisheries Commission happened also to be in Mobile -- in the Fall of 1957. On that occasion I drew your attention to the tremendous expansion during the first post-World War II decade in the field of interstate cooperation and, in particular, in the use of the interstate compact method of linking states together in regional and even in nationwide programs. This expansion has been so great during the past generation that one might almost assert that a fourth level of governmental activity has been added to the traditional, three-way federal, state, and local division. The added level would be in the "intergovernmental" or "interstate" level. One indication of emerging awareness of this trend is in the forthcoming volume on state constitutions, sponsored by the American Political Science Association. One of the chapters of that volume is devoted to the matter of intergovernmental cooperation -- and that chapter urges state constitution drafters and constitutional conventions of the future to devote more attention than they have in the past to assuring that compacts and other forms of intergovernmental cooperation are authorized and encouraged by the wording of the various sections and articles of state constitutions.

Today, I should like to talk with you for a brief time about some of the more important recent interstate developments in the field of natural resources -- the field closest to your interest. But I also want to direct your attention to some current and serious challenges to the future of intergovernmental cooperation.

Marine Fisheries

All of you are aware of the fact that interstate marine fisheries commissions now exist -- as they have for over a decade -- along all three of our coasts. In succession, the Atlantic States Marine Fisheries Commission, the Pacific Commission, and the Gulf Commission were organized in 1942, 1947, and 1949. Efforts to create a similar agency in the Great Lakes region were made in the 1930's and 1940's, but the international nature of those waters was one factor which led to the failure of that effort. Much more recently, the Great Lakes states developed a compact for broad-based study, and planning of their water

(Wiltsee, #2)

resources -- including fisheries as well as transportation, domestic and industrial supply, erosion of shorelines, and many other aspects -- and all of the states of that region, with the exception of Ohio, are party to that compact which was organized in 1955

Forestry Resources

When I talked with you in 1957, I mentioned the forest fire protection compacts which were, then, of fairly recent origin. Today, there are four regional forestry compacts -- in the Northeast, the Middle Atlantic area, the Southeast, and the South Central region. Twenty-five states are party to one or another of these compacts, including all of the Southern states. All four have in common the objective of providing mutual aid in time of forest fire emergency; but the party states have gone far beyond a limited interpretation of that objective and they have developed uniform training manuals, coordinated their purchases of fire-fighting equipment, devised similar job specifications for recruiting and training field personnel, and taken other imaginative steps. Field maneuvers or "dry-run" emergency tests have been held, followed by critiques and evaluations both of personnel efficiency and the effectiveness of various types of equipment. In addition to these steps, the compacts have been invoked numerous times, at least in the South, during emergency forest fire periods, and states have come to the assistance of each other as contemplated in the compact. Just as the Fish and Wildlife Service works closely and cooperatively with the Gulf Fisheries Compact, so the U. S. Forest Service works with and serves these compact groups in many ways.

Nuclear Energy

As it did in initiating the use of the compact for higher education, the South is doing the same in the field of nuclear energy. The Southern Governors' Conference four or five years ago created a Regional Advisory Council on Nuclear Energy to assist their states in making optimum peaceful use of this great new energy source. The Southern Nuclear Compact was drafted last year, it already has been enacted by two states, and will be considered by many more next year.

Water Resources

I mentioned previously the Great Lakes Compact. The broad scope of that compact gives a clue to the emerging nature of intergovernmental concern with natural resources today. Water, as we all know, presents different problem aspects in various places, or at different times. In the industrial Northeast, for example, it was the quality of water -- and its polluted condition -- which first galvanized interstate action on a large scale. As a consequence, several major interstate programs for the control and abatement of pollution were initiated in that area. The Delaware River Basin states organized an interstate pollution commission in 1936; in the same year, New York, New Jersey and Connecticut organized their tri-state Sanitation Compact Commission. These were followed by the Potomac River Basin Compact which organized in 1940, the New England pollution control compact in 1947, and the Ohio River Valley compact in 1948.

Water also can be a problem through its very scarcity, as in the arid and semi-arid states of the West. In that part of the country, the states have entered a wide array of compacts, some of them dating back many years, whose purpose it is to provide a firm contractual basis for the division of the waters of interstate streams so that they may be withdrawn for irrigation, municipal supply, and other purposes.

(Wiltsee, #3)

Water can be a problem at times through its sheer over-abundance in time of flood -- and the Mississippi River, the Missouri, Ohio, Tennessee, Arkansas, and many others, especially in the eastern half of the country, have given us periodic reminders of that face of the water problem. Aspects of water problems also include water-borne transportation, recreation, hydro-electric power generation, erosion, and many others.

The more we study water and come to grips with the hydrologic facts of life, the more we find that water is closely related to the soil of which it falls and to the trees and other soil cover which arrest the quick run-off of water into streams and on to the sea. We are finding -- and beginning to apply the knowledge-- that a comprehensive view must be taken of water and of these and other related land resources. And we also are learning that we must cooperate with nature very largely on nature's terms when we seek to carry out water development programs.

In many ways, the last three decades, and particularly that of the 1950's, can be viewed as the one in which the American people became dramatically aware of water. Droughts fastened on many parts of the country in the first half of the decade just concluded; -- draughts which were broken in many places by disastrous floods as in Texas, Missouri, and elsewhere. The so-called "population explosion" of which we have been hearing so much ^{began} during the 1950's to register on our collective consciousness, along with the continued rapid expansion in industry. We were suddenly brought face-to-face with the realization that our water resources are very definitely limited as compared with our capacity to consume and use it. It is not the alarmist now but sober students of the subject who are telling us that our very survival in the next century will depend very largely on the wisdom with which we act to eliminate waste and to stabilize, clean up, and utilize all available water supplies. This means cooperation, genuine and sincere, among all who bear responsibility for planning and carrying out programs in the field

Let me mention just a few of the outstanding recent developments at the inter-governmental level which mirror this awareness of these water problems

1. In the northeast, in the early 1950's, the New England-New York Inter Agency Committee was formed to aid in a study by the U. S. Corps of Engineers for the coordinated development of the areas's resources. Four years later -- and at a cost of over \$6 million to the federal government -- a 46-volume report was published, inventorying the region's resources. The New England Governors in 1956, then took the initiative in creating a committee, in cooperation with the Inter Agency Committee, to implement this massive report. It was decided after prolonged study and discussion, that a compact was the proper solution; and in early 1959, the six Governors gave final approval to the provisions of the Northeastern Water and Related Land Resources Compact. That compact has since been enacted by Connecticut, Rhode Island, Massachusetts and New Hampshire, and it probably will be considered in Vermont and Maine next year. While the compact commission will be limited primarily to coordinating and promoting resource development and thus is not an operating agency, it is unique in including several federal agencies in its commission membership. Despite potent although not unanimous Congressional backing, it has encountered strong opposition from several federal agencies including the Justice Department, and the issue is likely to be joined hot and heavy in the next session of Congress.

(Wiltsee, #4)

2. Farther down the East Coast is the Delaware River Basin, a relatively small geographic area -- but including the sections served by the waters of the Basin, it embraces over 22 million people. The metropolitan area of New York^{City} and Philadelphia are among those involved. Several major studies of the future development of the Basin have been concluded during the past year or so; -- and out of these has emerged the widely-held view that a multi-purpose, basinwide, joint federal-state compact is the best answer. This was the conclusion, for example, of the Syracuse University Study of the Basin released just a year ago. Efforts to draft the compact are going forward even now; but again it has become apparent that there is considerable federal agency opposition, both to the theory of federal participation in the compact and to the practice of enforced coordination of plans and programs.

3. In the Midwest, the States of Illinois and Indiana in record-breaking time drafted and in 1959 enacted the Wabash Valley Compact providing an interstate commission to plan and stimulate the development of that area's resources. This was the first compact to include, specifically, all natural resources within its scope. No formal federal agency participation was contemplated; but the Congress insisted on adding certain language to the consent act which was irritating to the party states, although not particularly harmful to the compact's operation.

4. In the South, during the past three years, Alabama, Mississippi and Tennessee have entered into the Tennessee-Tombigbee Waterway Development Compact, designed to promote the development of a navigable waterway connecting the upper Tennessee and the Tombigbee Rivers and to encourage federal projects for that purpose.

5. In many river basins, the concept of joint federal-state participation in studies of future basin development has been employed widely recently. Examples include the various Inter-Agency Committees. I mentioned the New York-New England Committee earlier. Another such study in the South was by the Arkansas-White-Red Basins Inter-Agency Committee formed in 1950, and there are others in other sections. Closely related to these are the two more recent river basin study commissions created by the 85th Congress; that in the Southeast, which includes Georgia and portions of adjoining states, and the Texas study.

6. I should add one further illustration of broad-front approach to water, although it is more a matter of "futures" than the previous ones I have cited. On Monday and Tuesday of this present week, Governors or their representatives from eleven states -- from Alabama and Georgia north to New York -- met in Lexington, Kentucky, to discuss the economic problems of the people in the Appalachian Mountains region and possible cooperative steps to solve these problems. When the conference adjourned on Tuesday, these states had agreed to create an informal association, to step up coordination of their developmental programs, and to pay particular attention to two major fields -- first, to improve more intensively the highway systems leading to and through the region; and second, to stimulate more complete development and utilization of the water resources of the area. Until the Governors meet again early next year to fill in the organizational and operational details, we can only speculate about the future of this program -- but the attention they have already paid to the role of natural resources is symptomatic of the current trend.

The states, apart from the foregoing instances, have been responding in many other ways to the new challenge. More and more states have created agencies to

(Wiltsee, #5)

deal with water in its various aspects; many of them are taking steps to assure more effective coordination among programs dealing with water and related land resources. Here in the South, representatives of these various state agencies got together two or three years ago and created a Southern Water Resources Conference. That voluntary interstate association is serving to increase awareness in this region of the indivisibility of our basic land and water resources. It also is stressing the importance of action by the states and of state initiative to stimulate sound programs for water conservation and use. The new Southern Office of the Council of State Governments, by the way, is serving as the staff for this Conference.

Further evidencing this interest in a broad front approach, an Interstate Conference on Water Problems was created in Chicago two years ago. That Conference met originally on an experimental basis, but the response to the first meeting was so enthusiastic that it promptly took its present permanent form as an association, also served by the Council of State Governments. Various considerations led to the organization of this interstate conference, but two probably were paramount. First was the basic trend to which I have referred, that is, the increasing importance of our water problems and their relationship to other natural resources. The second and more immediate cause, however, was the growing conviction among state water people in widely separated parts of the country that the integrity of state water law and of state jurisdiction over water resources was threatened by federal control.

In the West, the Attorney General and water agency folk sensed that their entire systems for allocating water for municipal, industrial and agricultural uses were menaced as a result of Supreme Court decisions in the Pelton Dam, Hawthorne, and other cases. When these Western State representatives sought corrective legislation from Congress, they encountered what they felt to be a hostile attitude in the Justice Department. In the South, in 1957-58, the Tennessee Basin Pollution Control Compact met with federal administrative agency objectives -- some of which were downright frivolous -- when the states of that Basin sought Congressional consent to the Compact. Similar experiences were giving increasing concern to state officials in the Northeast and Midwest. Thus a major factor leading to the establishment of the Interstate Conference on Water Problems was a growing feeling of state distrust of federal attitudes with respect to water resources specifically, and with respect to flexible use of compacts to achieve intergovernmental cooperation, generally. The states felt accordingly, that by uniting, they could form a more potent force in combatting such attitudes.

I referred previously to foot-dragging by several federal agencies in connection with the Northeastern Water and Land Resources Compact. These agencies, in hearings on the Compact last March, opposed participation as members in the compact commission, even though the states involved urged such participation and the Congressional sponsors as well as the states felt that this offered an excellent means of bringing about genuinely coordinated planning, not only among the levels of government involved but within each of the governmental units involved. One is forced to conclude that such agencies are concerned much more with the unimpaired sanctity of their private domains than they are with the public weal. Other recent examples of this intransigent attitude could be mentioned, but they serve only to underline the need for increased awareness among the states in the years immediately ahead.

I would be derelict if I failed to bring to your attention one additional

(Wiltsee, #6)

challenge to interstate cooperation. We have been aware in recent years of a tendency within our national legislature for Congress to concern itself more and more with the details of compacts. You may recall in that connection that your own Gulf Fisheries Compact was one of the first cases in which Congress placed amending or conditional clauses in the consent act, subsequent to its introduction.

This has become Congressional practice increasingly of late, as witness my previous reference to the Wabash Valley Compact as well as numerous and other instances.

An extremely irritating example of this Congressional attitude is the Interstate Compact on Juveniles which is concerned with rehabilitation of juvenile delinquents. It is particularly ironic that the States were urged several years ago by a U.S. Senate Select Committee to develop interstate agreements in this field, to handle runaways, etc.; -- ironic, because when the States went to Congress to obtain consent, a House committee decided that each new state ratifying the identical compact document should come back to Congress for specific authority to join. This procedure was so distasteful that the states decided instead to go ahead and operate without specific consent, relying on judicial precedents in place of express consent.

In very recent months, the Port of New York Authority Compact has been subject to close scrutiny by the House Judiciary Committee. Some months back, the chairman of that committee introduced legislation to amend the original consent legislation and thereby to subject future Port Authority activity to greatly increased Congressional scrutiny. Opposition to such a move was widespread; and hearings on the bill, after several postponements, were completely dropped. The committee then requested and received from the House of Representatives special authorization to investigate the Port Authority, and in June, subpoenas duces tecum were issued against the chairman, the director, and the secretary of the Authority. The subpoenas required the production, for examination by the House Committee, of many classes of records and papers including internal work records, job descriptions, etc. It will be recalled that the Port Authority is an interstate commission of New York and New Jersey; and at this junction the Governors of those two States interposed their authority and directed the subpoenaed officials, as officers of the two States, to produce only such records as were germane to an identifiable federal interest. This was done in July and the three officials appeared before the House Committee. The Committee then cited the three officials for contempt; and during the reconvened session of Congress in late August, the House voted contempt. The issue now probably will go to the federal district court for adjudication.

While these proceedings have been going on, representatives of the States have taken strong positions denouncing the action of the House of Representatives and its Judiciary Committee. The National Governors' Conference, for example, did so at its meeting in late June; the National Association of Attorneys General took similar action a week or so later. If the matter goes into federal court, it has been urged that the Attorneys General join in an amicus curiae brief asking the court to reaffirm the proposition long held by students of the subject, that an interstate compact body is no less exclusively an agency of the party states for its having received the consent of Congress.

(Wiltsee, #7)

By virtue of your own status as a commission created by interstate compact, I know that you will follow the course of the Port Authority case with keen interest. I would add just one personal observation: We have heard for so long from so many of the advocates of centralizing activities in the federal government that they are forced to take this position because the States are not doing their jobs. But we see that when the States seek to exercise their powers effectively and imaginatively, they are beset and belabored and bedeviled. Was it Alexis de Tocqueville who said -- democracies tend by instinct and emotion to centralization; it is only by reflection and thought that they attain decentralization?

It is apparent that new challenges to interstate and intergovernmental cooperation are being presented. There is need for the states, again, to stand together in defense of their constitutional right to exercise jurisdiction over many fields of traditional occupancy -- and to select the legal mechanisms that they choose with which to exercise that jurisdiction!

Early next year, if present plans materialize, the Council of State Governments intends to call a small and select conference of the staff heads and chairmen of all the commissions and agencies created by interstate compacts, to enable these key people to become better acquainted with each other and with the problems they face. An important topic for consideration will be to review and evaluate the recent trends within the Congress and in the federal executive branch. I urge the Gulf States Marine Fisheries Commission to participate in that important conference.

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GULF STATES MARINE FISHERIES COMMISSION
St. Petersburg Beach, Florida
Colonial Inn
October 20-21, 1960

"THE FRUITFUL POSSIBILITIES OF A COOPERATIVE PROGRAM INCLUDING
SPORTSMEN, COMMERCIAL FISHERMEN AND OUTDOOR WRITERS"

H. R. Wilber, Executive Secretary
Florida Wildlife Federation
Deland, Florida

It is a pleasure to be here as a raconteur of a project that has proven beneficial to the fishing pleasures of Florida. Fishing is a pleasure. The source of pleasure derived from fishing depends upon one's fishing classification. Fishermen may be classified under two headings: sports fishermen and commercial fishermen, and each of those two headings have two sub-headings. In the case of the sports fishermen, let us call them stabilized and itinerant; in the case of the commercial fishermen, itinerant and professional. To clear my allusion, let me explain that itinerant means to wander from place to place. I wish you could take the 'wandering from' in each instance rather seriously because my connotated itinerant is included in both of the major classifications for fishermen. I put to you the thought that in each case the wandering has been from the better principles and ideals involved under the major classification groups.

To speak further of the pleasures, the stabilized sports fisherman gains his pleasures from the harvest of no more food material than can be disposed of as food in the immediate future, and the release immediately of fishes caught in excess of that need to their native habitat if and when such fishes appear sufficiently uninjured to live to bite another day. The stabilized sports fisherman finds his greatest pleasures when the fish has the advantage of the tackle and the fisherman the advantage of mentality.

Itinerant sports fishermen, having wandered away from these precepts, I should like to indicate him as the man who takes more fish than he can use for food, his source of pride being the acquisition of vast amounts of fish for varied purposes. One of the common purposes is to hang a lot of dead fish on a big board and have his gluttonous picture taken with the unnecessary catch, implying that he has skill beyond the average and using this portrayal to convince people of his ability. To me this man has only \$25 to \$100 with which to purchase the services of one who has the skill, so, from the beginning he is a counterfeit. Another reason for the acquisition of large catches of fish is to satisfy his lust and selfishness and, to preclude the shame of wastes, he claims glory. This type man has been guilty in Florida of affecting our markets badly by the sale of an inferior grade of merchandise at low prices. His greatest harm comes from the mass of the group who because of their great numbers cut deep inroads into the profits of legitimate commercial fishermen. Often times this man, unable to sell or even to give away his catch, wastes the same catch by burial or just plain discard for rotting.

It has often been said that commercial fishing is the second oldest profession in the world and has been repeatedly recounted as an admirable profession in the Bible, at the time of the writing of which, it was already an ancient profession.

(Wilber, #2)

Professional commercial fishermen then, have an ancient reputation to uphold, and they often find it hard to stay within the bounds of the dictates of their conscience because of varied attacks by the itinerant subclassifications of fishing upon their very livelihood. Professional commercial fishermen obtain their pleasure from fishing, from the reflection that their earnings make upon their standard of living, their fishing equipment, the education and welfare of their family, together with their pride of public position. Through the gradual process of the replacement of opinions with knowledge, gathered from proper information and education, the sportsfishing public of the State of Florida have acquired an admiration for the stature of the professional commercial fishing group of the state, and have eliminated the opinions, heard far too often in other places, that all commercial fishermen should be opposed in every effort they make and blocked at every turn they wish to take.

The itinerant commercial fisherman obtains his pleasure from diverse areas it seems to me. Never able to quite make a living, he carries a perennial grudge against all others who fish. It is his greatest pleasure to harvest legal or illegal fish that have been a source of pleasure or profit to the honest fisherman. Failing to do so, he might turn to just plain destructive fishing such as the hanging of inedible fish of sports varieties in trees, to haunt the thoughts of sports fishermen who derive many days pleasure in the pursuit of same. Or they might turn to illegal means of making a livelihood by illicit liquor traffic, illegal harvest of shellfish, shrimp, etc. They never have the equipment for maintaining fishing products at the saleable level required by public health.

Thus, the itinerant member of the second oldest profession of the world comes to occupy a spot similar to the personality of the oldest profession of the world, the itinerant midnight actress, in that they both constantly disrupt a better way of life, with little profit to themselves and are a constant thorn in the side of the legitimate professional. Itinerant types are never organized or constructive. Therefore, only stable sports fishermen and professional commercial fishermen can work for the common good.

Realizing the above fact after too many years of controversy, the stable sports fishermen and the professional commercial fishermen of Florida decided to meet on as many occasions as necessary to organize a program profitable to both, to be presented to the people and the Legislature of Florida. To date this effort of the sports fishermen and the commercial fishermen is another Florida first and both groups are extremely proud of the part they have played therein. In addition to sports fishermen and commercial fishermen, Florida's Outdoor Writers Association joined hands. With the aid of this group who are also sportsmen, we were able to keep the public sufficiently informed to prevent buildup of opposition. As often as not these writers took the lead in our enterprise of cooperation although for years most writers have vigorously castigated commercial interests.

Feeling its way, this committee first undertook the passage of legislation to make snook a gamefish. The committee's troubles were many and varied because individuals, outside the committee, within both groups stubbornly refused to believe that the other had any virtue and that any efforts they made were made because of selfish reasons only, and that no good could come from any type of an alliance. This first effort came to naught at the first legislative session because of the inborn opinions of the uninformed; undaunted, the bill was re-presented at the next session of the Legislature after another half dozen common meetings and the law

(Wilber, #3)

was passed. The sports fishermen wanted this law because of the fine gameness of this subtropical fish, which at times became the prey of illicit fishermen of both groups during periods of cold weather, etc. when this true gamefish became so dormant as to make it possible to be captured in great numbers by almost any known method of fishing. The commercial fishermen were willing to permit the making of snook a gamefish because no true market existed for this species; able to be caught in commercial amounts, only irregularly. Also, the willingness of the commercial fishermen to go along was because this same snook periodically flooded the commercial markets with fish that had no listing for sale, and which had to be sold as some other listed commercial variety. Because of the above facts, this fish, so extremely valuable to sports fishermen of Florida and the tourists who spend their many millions of dollars here, was an extremely low-priced fish carrying little profit and of no interest to the true professional commercial fisherman.

With the passage of this legislation, everybody felt the stimulus of accomplishment. Friendship had been made and a program of common effort also was set forth. Sportsmen and writers continued to aid the professional commercial fishermen groups under this program of common effort in several distinct directions as follows:

1. Reduction of the number of local laws harrassing commercial fishing on the coast of Florida became the first target of ^{the} endeavor. Many of these local laws had been caused to be passed by sportfishing groups who had become angered, probably not at the professional commercial fisherman but because of the antics of the illicit commercial fishermen; and so through their legislators brought into being handicapping local legislation. While there are today many local laws on the books, there are many fewer than ever before. At the last session of the Legislature no local laws were passed. Both groups working together have created a situation in our Legislature under which plan all local laws referring to salt water fishing within the state must be referred to committee before presentation to the floor of the Legislature.
2. Both groups have worked with their friends in the Legislature and with the leaders in both the Senate and the House to let it be known that our efforts are common and that we therefore are asking for an improvement in the personnel of the legislative committees in order that in the future our bills would be considered with understanding.
3. Both groups have worked together for an increase in appropriations to the Florida State Board of Health in order that an increased program of water quality control may be carried out and that recognition of the need for increasing public health controls over seafoods in the state will be supported.
4. Both groups have worked tirelessly for the creation of an increase of research programs through the Department of Conservation and the United States Fish and Wildlife Service so that insofar as possible fishing shall be maintained at present levels, in spite of the population explosion within the state. It was my pleasure to have been the first to ask the Assistant Secretary of the Interior on the day that he took office to create an East Gulf facility to preclude the old nemesis so well known by this group: that of having our fishing program controlled by a regional office in New Mexico and the studies furnishing the information by a research unit in Galveston, Texas. That this request came so rapidly into being has been a source of pride to me.

(Wilber, #4)

5. Both groups have sought and obtained aid in the study of red tide in the Gulf. Both groups have met with the administrative and scientific forces combatting red tide and both groups have injected original thinking into the program as it progresses to date.
6. Of constant concern to both groups are the destruction of spawning areas and growing areas in the estuarial waters of Florida by bulkhead programs and landfills, which destroy such bottoms. While they may not be too detrimental in their individual aspects, we have realized together that the sum total of their destruction might well wipe out commercial and tourism fishing advantages now enjoyed in Florida.
7. Probably the most opinions expressed on any one subject have been issued by sportsfishing groups protesting against the bait shrimp program. They have alleged that this three-million-dollar-a-year industry is destroying the grass beds and spawning beds so necessary to salt water sportfishing, always forgetting that the bait shrimp are used only by the sports fishermen, stable or illicit. All are always of the opinion that they should be harvested in some other waters of the state than those near to them or certainly not those where they might choose to fish. They never organize their thinking to the place that any definite areas be allocated to the harvest of the bait shrimp, that they demand the privilege of buying. This poses a big problem today and its solution will be gradual as fishing pressures increase.
8. Both groups have become extremely conscious of the disadvantages of bootleg sale of both legal and illegal fish on the markets. The illegal transports of Florida fresh water scale fish north out of Florida for sale interferes with the fish markets to the North of us and at the same time causes much chagrin to the sportsmen as their bass, brim, cruppy, etc are hauled away by the ton to be disposed of by illicit interests interested only in self gain.
9. On the commercial side, both groups have come to realize the depredation of water pollution as it affects the shellfish, sporting fish, sponge, shrimp, etc. in the estuarial waters and a strong program of opposition is in the making.
10. Sports fishermen have acquired assistance from commercial groups as they inaugurated a program of artificial reef construction for the harvesting of salt water fishes to make them more readily available for sports fishermen. Sportsmen have asked for and obtained information from commercial fishing groups as to the location of these artificial reefs in such manner as to cause no trouble to commercial fishing. This program is growing in popularity and will need constant study and control lest it get out of hand.
11. We have jointly held studies of bag and size limits concerning the proper harvest of both sport and commercial varieties of fishes. A special study is being made at this time concerning classification of barracuda, which is a non-commercial variety, to a protected species.
12. Studies and discussions of illegal or inconsiderate seining practices occur most frequently and I am glad to report that the commercial people have taken it upon themselves to criticize legitimate commercial fishermen because of the dropping carelessly of trash fish, etc. where they will wash ashore and become a menace to tourism in the state. They have also criticized members of the fishing industry

(Wilber, #5)

for encircling and entangling the lines and fishing gear of sports fishermen when commercial fishermen are too anxious to harvest fish at some particular location.

13. Both groups have been faced with problems concerning legal laxity and judicial indifference to enforcement and control problems faced by the Department of Conservation.

14. A definite problem or healthful care of all catches of fish for sale seems to be the only means available to control illicit fishing by sports, fishing, not sportsmen, which seems to be a legal tourist practice in places and a local occasional problem for residents within the state. The sportsmen will be most anxious to aid in any way that will eliminate this menace.

The Florida Wildlife Federation has attempted to help the commercial fishing groups as well as themselves at national level and have supplied three major efforts toward this end.

1. We have made use of the federal contracts of the National Wildlife Federation in committee presentation and in the creation of resolutions dealing with subjects to be listed later on.

2. We have supplied conservation information service regarding conservation bills up for passage in Congress, in committee in Congress, and in preparation for committee to the best of our ability through the regular conservation news service of the National Wildlife Federation.

3. Presentations to committees which have already been made favoring both commercial and sportsfishing interests as follows:

a. Made presentation hoping to help the shrimp fishing industry of the state concerning the passage of a protective tariff on foreign shrimp sufficient to create equal opportunity in our markets for U. S. shrimpers.

b. A similar request was made for food fish imports.

c. An appeal was made in favor of the commercial packaging people regarding interstate shipping in industrial carriers owned by seafood producers versus ICC transport.

d. Appeal was made supporting seafood processors regarding their packaging rules and regulations.

e. Appearances and presentations were made regarding water quality control, studies, and allocation of funds.

f. Appeal was made for increased facilities for research in the East Gulf Lab.

g. Appearances and presentations were made regarding pesticide use and control studies.

h. Every opportunity was taken to appeal for control of silting and control of effluence of fresh water into the salt waters of the state, especially through the assistance of the passage of the National Co-ordination Act.

(Wilber, #6)

- i. Assistance was given to the passage of the Bonner Bill dealing with water traffic safety laws in all the waters of the state.
- j. Written presentations and committee appearances concerning the atomic waste disposal program pressed for Coordination Act handling.
- k. Presentations and committee appearances were made concerning oil spillage and cargo vessels washing into the shipping lanes and harbors of the Southeast.
- l. Presentations and committee appearances were made concerning sovereignty land studies and salt water license studies.

I list these things above in order that there might be available to some here information concerning avenues of aid which sports fishermen have been giving that might be of great benefit to sports fishing interests as well as to interests of commercial fishing sometimes.

In closing I should like to refer to certain possibilities that I believe to be constructive and which have been considered by both groups in some length. Certain leaders have convinced me that Florida is in a definite need of a seafood commission similar to the Florida Citrus Commission. Such a commission could control and regulate license structure, research allocations, harvest rules and regulations, the health regulation of catch care, storage, and excellence of product, in order that all might benefit.

We hope that Florida's example is good enough that other states will find it efficacious to follow our leadership. To you all I say, "It can be done."

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GULF STATES MARINE FISHERIES COMMISSION
St. Petersburg, Florida
Colonial Inn
October 20-21, 1960

"INTER-AGENCY COOPERATION IN FLORIDA"

A. D. Aldrich, Director
Florida Game and Fresh Water
Fish Commission
Tallahassee, Florida

(Presented by H. Eugene Wallace)

It is generally agreed that one of the most urgent requirements in natural resource conservation is coordination of State and Federal agency interests and responsibilities. There are few, if any, State or Federal departments who are not involved in some measure with the use and management of natural resources. Each agency can contribute in varying degrees, in planning the most beneficial multiple-use system of management for the common welfare.

With this basic concept in mind, there has evolved a series of meetings between State and Federal agencies in Florida, which, for want of a better definition, have been called Inter-agency Coordination Conferences. Organized three years ago on an informal basis to provide better communication and cooperation among the various natural resource interests, the Inter-agency Conference now consists of representatives from all state agencies concerned, plus invited representatives from a number of federal and local agencies and non-governmental groups. Items of current importance are reported on and discussed at length. Primary emphasis is devoted to the dissemination of information and the solution of problems of mutual concern. Although the Conference has no formal or official operating capacity, many of the ideas and expressions of viewpoint aired at the conferences find their way into policy and program of individual participating agencies. The sponsorship and direct interest of the Governor's Office gives further stature to this important function.

From the start, these meetings have proven very beneficial and highly productive. The personal acquaintance established between administrative personnel of various State and Federal agencies has made deliberations and negotiations more informal and pleasant. The meetings have brought out an understanding of each other's responsibilities and obligations to and for their respective agencies as related to or concerned with the development, management and conservation of the State's natural resources in the public interest.

Among the several objectives of the group is the planning of balanced overall programs which avoid overlap of effort and expense and eliminate conflict in objectives.

All agencies have specialists in the many areas of responsibility delegated to them by law and general policy. The combined wisdom of professional talent and administrative experience in services and aid to one another will be of inestimable value in designing sound, practical and

(Aldrich, #2)

economical programs. The Inter-agency Coordination Conferences bring these specialists with their accumulated wisdoms to a common meeting ground.

Such coordination between agencies does much to achieve the necessary and desirable public understanding of individual and collective agency responsibilities. The meetings are available and open to any group or organization desiring audience. They make it possible to have open discussion on matters of general concern and interest while all agency representatives are together for a common cause.

The significant thing about these meetings is that they are entirely informal, unofficial and voluntary on the part of all agency representatives attending. No formal actions may be taken since there is no machinery for such; therefore, the discussions and agreements are not binding on any agency involved. It is purely a democratic process which is intended to be of informational value for administrative purposes. Firm agreements and recommendations will inevitably result. Certainly, each agency will be better equipped to make its own decisions and policies on matters of mutual concern to the other agencies.

The objectives might well be summarized as a sincere attempt to insure the orderly and systematic development and use of Florida's natural and recreational resources. After all, nations rise and fall in proportion to the degree of control they exercise over the use of their resources. It is essential that all branches of government recognize the relationship between man and his environment.

With the continued cooperation of all groups interested and active in their respective fields, the problems involved with the development and growth of the State can be resolved in a satisfactory manner. Certainly, the machinery is in operation. With collective understanding, patience and tolerance, the process will be much more pleasing and fruitful.

In closing, and as a matter of injecting a few figures into this discussion, let me say that we have had seven meetings thus far which means that we hold them about twice a year; they are usually attended by about fifty individuals and there have been as many as thirty different public agencies and private groups represented at a single meeting. Where else could you get that many different interests concerned with our natural resources in one room for orientation and an exchange of information? This, to us here in Florida, is the value of the Inter-agency Conference. If you have not done so, we invite you to try it.

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GULF STATES MARINE FISHERIES COMMISSION
St. Petersburg Beach, Florida
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"MARINE RESOURCE INFORMATION EDUCATION"

Howard D. Dodgen, Executive Secretary
Texas Game and Fish Commission
Austin, Texas

Delivered by: Commissioner Wilson Southwell

There seems to be no end to the need for information regarding the conservation of the renewable natural resources of our country. Much has already been done in the field of fact-finding, many other programs are now underway, all designed to cause a better management job to be done. There is a definite need for a planned, systematic, professional effort to present the facts regarding the values, relationship, and management practices to the whole public. This to include the entire field of activities affecting the use and production of the Gulf of Mexico and its adjacent land and water.

Marine resources probably afford a more complex pattern of problems than any other, and the fact that it is a publicly owned resource gives rise to the feeling that that which belongs to everybody belongs to nobody. Then the spirit of exploitation is exercised greatest under such conditions.

Within each of the states represented here there is an adequate corps of technicians studying every aspect affecting the most important forms of marine life found in the Gulf of Mexico. The states' efforts are supplemented by additional research and exploration done by the United States Fish and Wildlife Service. All of this fact-finding effort seems well enough coordinated, and its results are made available to the responsible administrators and legislatures of the several states. No improved management programs can be successfully installed or carried out until first there is a general public understanding and public acceptance of the practices recommended. Accomplishments can be had no faster than the public can willingly follow.

It seems that those of us in administrative and legislative capacities, responsible for the management of the marine resources of the Gulf, must accept the responsibility in furnishing the leadership, and the proposals, for improved conservation practices wherever they are necessary. It is not enough that we inform only those who have a direct interest in the harvest of this great resource. All of the people, whether they participate as commercial fishermen, or fish for pleasure, are equal general stockholders and are entitled to adequate information as to what is happening to the marine resources of their state and why.

It is not uncommon that we find conflicts of interest between various segments of the commercial fishing industry, there are further conflicts between segments of recreational fishing interests. You are well aware of the further differences that occur between recreational and commercial fishermen, to say

(Dodgen-Southwell, Pg.2)

nothing of the additional differences occurring between the two types of fishermen and others who have a stake in navigation, industrial development, shell dredging, etc. Arising from all this comes a maze of often distorted ideas and misinformation, generated by well meaning people who have not had the proper opportunity to learn the basis facts about the care and use of our marine resources. Often conflicts are not caused by those who have interests in the care and perpetuation of marine resources, but are sociological in nature and must be solved by legislation aimed at protecting and improving the resource with fairness and equity to all citizens.

It is recognized that in giving out factual information for public consumption, that it is rarely, and probably never, possible to rest on a firm conclusion. As we learn more about the subject, constant improvements and adjustments are necessary. It is believed that no state claiming membership in this Commission has fully discharged its obligation to its citizens in giving out clear and conclusive information on the values and best known management practices to be applied to their marine fisheries. This fact makes it difficult to talk at length, or to boast at all, about what has been done in regard to disseminating information on this subject.

It would be much easier to analyze what has not been done, for this seems to be the broader field; but, since I am most familiar with what Texas has at by way of information on marine subjects, here is a summary of our efforts: The Texas Game and Fish Commission publishes a monthly magazine. Occasionally this magazine, Texas Game and Fish, carries a story regarding activities or our marine division, and others relating to the more interesting or unusual forms of life found in our coastal water. The coast was emphasized in two motion pictures designed for a television series, but there again the message was directed toward activities more than to findings or to resource management.

The best effort probably has been directed toward the publication of bulletins designed for layman use which we believe to be quite valuable. One is a bulletin of the menhaden fishery directly at giving factual information regarding this industrial fish, and pointed especially toward alleviating the fears of recreational fishermen who seem to believe that soon the menhaden will all be gone, then their sport fishes would starve. Another is a very informative bulletin on shrimp, which is being replaced with a revised edition that we believe will be helpful in bringing about an understanding of its life cycle and how it might best be managed. Similar bulletins in current circulation on the life of the oyster seem very informative. We have published a food and game fish bulletin to be used by those who want to identify the fishes they catch. This is especially popular and doubtless serves a good purpose in generating an interest for those who visit our coast. Currently a bulletin is being prepared on crabs, of which we have over 80 species in Texas; the blue crab being the primarily usefull species, will probably come in for the lion's share of attention. There are other similar bulletins which we will not mention here, but they deal with separate species of interest, while others are covered in various technical papers that have been published.

In this push button age it isn't easy to encourage a vast number of people to read even a popular bulletin, such as has just been mentioned, so it is essential that other information media be used to get the story to the stockholders. The use of motion pictures and colored slides which are attractive and entertaining, hold the viewers interest and furnish a great possibility in telling the story about what has been learned, how management is being carried on, and what improvements should be instituted.

Personal appearances before civic groups and other organizations afford another means of presenting facts needed to be known by people generally. When the speaker has the information and presents it well, the results in gaining acceptance and understanding is everpresent. Open forum discussions under such conditions are awlays desirable, for the chance to correct misinformation becomes a great opportunity.

News releases directed toward knowledge gained through the wide variety of work projects in progress are sought after by the press. This media probably reaches more citizens than any other form of information, and with proper and well chosen follow-through will stand to accomplish the most good. It appears to me that the greatest lag we have in Texas is in not using more fully the facilities of radio and television.

It would not seem out of order to say that each state conservation department should devote as much as 10 percent of its annual budget to the dissemination of conservation information. There is little use in finding out the whats, whys, and hows of this important subject, if the things known about it are kept as professional secrets.

In the matter of attempting to disseminate proper and useful information to the public, it is to be remembered that in the broad sense we are dealing with two groups; one, and probably the largest of these, is the group with preconceived ideas, many of which are tqtally inaccurate and based upon hand-me downs from the past; the other is a group without particular interest or knowledge, and without definite opinions on the whys and wherefores of marine management, who sometimes may not see the need for any such management at all. The uninterested group probably furnishes the greatest challenge, for in the stimulation of their interest they usually turn out to be somewhat more understanding and more objective when forming their opinions. These may be citizens who are not members of clubs and other organized groups and therefore prove themselves to be more difficult to reach.

As leaders in the field of conservation it is our responsibility to stimulate interest in the uninterested, to offer information to those who are interested, and to continue to do so until the day arrives when there is a common understanding that a resource that produces two hundred million pounds of fishery products, landed at Texas ports alone, is recognized as one of great importance, and that there is a need for constant improvement in its management so as to gaurantee its profitable continuance.

As a basis for carrying out the proposals made here, conservation administrators are blessed with staffs of professional workers who seem more devoted to their profession than any similar group to be found anywhere. Any failure to take advantage of their knowledge, enthusiasm, and willingness to work would be expensive mismanagement. To get the best use from their efforts their light must not be placed under a bushel.

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"THE BIOLOGICAL ASPECTS OF THE EXPANDING GULF
FISHERY FOR INDUSTRIAL SPECIES"

Winthrop A. Haskell, Biologist
Bureau of Commercial Fisheries
Pascagoula, Mississippi

Introduction

The manufacture of animal-food products from trawl-caught industrial fish began in 1952 and by 1959 had expanded to a total of nearly 85,000,000 pounds. (See Table I.) These fish are the same species as those caught and discarded by Gulf of Mexico shrimp fishermen.

TABLE I

TOTAL TRAWL-CAUGHT INDUSTRIAL FISH LANDINGS BY MONTHS 1958-59
(1,000 pounds)

<u>Month</u>	<u>1958</u>	<u>1959</u>
January	2,816,587	9,429,721
February	3,145,277	9,086,918
March	3,361,649	6,278,517
April	5,521,701	7,306,783
May	7,251,993	9,074,911
June	7,408,830	8,368,542
July	7,164,104	5,934,039
August	7,498,735	5,667,194
September	6,106,092	6,010,256
October	6,931,725	5,901,819
November	5,342,498	5,638,292
December	5,303,650	6,081,147
Total	67,853,841	84,778,139

The importance of the industry is shown by inauguration in 1960, by U. S. Department of Agriculture official inspection seal on petfoods passed for inspection (Gruber 1960) and by the fact that the total value of domestic consumption of petfoods exceeded \$485,000,000 in 1958 and is still growing. This total is, incidentally, more than was spent on baby foods for the same period (Coleman 1960), as shown in Table II.

TABLE II

VALUE OF TOTAL DOMESTIC CONSUMPTION OF PETFOODS - 1958

Canned Catfoods	\$220,200,000
Canned Dogfoods	41,770,000
Other Cat and Dog Foods	<u>192,200,000</u>
Total	\$454,170,000

(Haskell, #2)

In 1958 the Bureau of Commercial Fisheries initiated a biological study to ascertain the following: (1) species entering the catch, (2) seasonal and annual changes in species composition, (3) catch statistics, (4) life histories of the dominant species to determine such factors as age and growth distribution, maturity, and spawning behavior.

Grounds and Depths Fished

The industrial fishery presently includes only some 4,000 square miles in the Gulf between 1 and 20 fathoms. Mississippi Sound and closely adjacent waters contribute approximately 65 percent of the catch the year round. Most of the remainder is caught west of the Mississippi River in the winter.

Waters fished most heavily extend from the vicinity of Mobile Bay entrance to south of Chandeleur Island. The depths fished range from about 2-6 fathoms in the summer and from about 8-20 fathoms in winter although M/V Oregon explorations show large numbers of bottom fish available in deeper water.

Species Composition

Three species make up approximately 75 percent of the catch throughout the year (See Table III). They are the croaker (Micropogon undulatus), spot (Leiostomus xanthurus) and silver trout or silver sea trout (Cynoscion nothus). Croakers average about 50 to 55 percent of the total catch by weight and they are the mainstay of the industry.

TABLE III

THREE DOMINANT SPECIES^{1/} OF CATCH FOR 1959-60

<u>Month</u>	<u>Percentage of Total Catch by Weight</u>	
	1959	1960
January	71.41	83.60
February	78.01	80.96
March	76.22	73.56
April	73.22	67.06
May	64.42	58.04
June	70.77	73.01
July	68.92	61.85
August	64.17	68.74
September	69.06	71.04
October	63.18	Data Incomplete
November	66.44	Data Incomplete
December	78.82	Data Incomplete

^{1/} Croaker (Micropogon undulatus), Spot (Leiostomus xanthurus), Silver sea trout (Cynoscion nothus)

To date a total of 77 families and 184 species have been identified by Bureau biologists in landings in the Pascagoula area. Of this total, all but about 20 can be termed unusual or rare.

(Haskell, #3)

As a contrast with the Gulf fishery, the New England industrial trawl fishery comprises 44 species of which four species, the silver hake (Merluccius bilinearis), and two skates (Raja sp.), are the most important (Edwards and Lux 1958). The California fishery has listed 35 species as utilized in animal food landings for that area (Best 1959).

Species generally referred to as "sport fish" or "food fish" are rarely caught in our Gulf fishery, comprising at all seasons less than one-half of 1 percent of the total catch. The trawl is selective gear and is not suited to the capture of the fast-swimming, highly maneuverable food and sport fish of this area.

The silver trout commonly caught in large numbers is generally looked upon as an inferior food or sport fish as the flesh softens rapidly after death.

A total of 636 landings have been sampled in the past 19 months. These samples show that, with rare exceptions, all fish taken in industrial fish trawls are of small size and hence are unsuitable for either human consumption or sport fishing, the average size being from about 5 to 8 inches.

The few food fish taken incidentally, such as flounders (Paralichthys sp.) are sold for market.

Studies of gonad development reveal that some of the species common to the northern Gulf area spawn throughout the calendar year with the majority spawning in the late summer months.

The Fishery and its Future

Indications of a growing market for petfood for some 21 million cats in North America and the large potential yield of the bottom fishery of the Gulf appear to favor enlargement of the fishery. There is no indication that the industry is adversely affecting presently exploited populations. The effect of the trawl fishery on sport fish and shrimp were reviewed by Gunter (1956) who felt it was not damaging. In New England, similar studies by Morrow (1951) indicated "...continuation of the fishery might actually have a beneficial effect on the fishing industry as a whole in this region." Fishing could be extended into deeper unfished waters, and the potential for increased utilization of bottom fish is very great (Vincent 1951). By utilizing this important resource intelligently, the industry contributes to the development of the northern Gulf area and to the advance of conservation in the sense that "Intelligent use of a natural resource at its maximum sustainable level" is representative of the ideals of conservation.

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- COLEMAN, William C.
1960 For every dollar spent for pet food... Petfood industry Vol. 2, No. 2, February, pp. 20-21

(Haskell, #4)

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1958. New England's industrial fishery. U. S. Department of the Interior, Fish and Wildlife Service, Commercial Fisheries Review, Vol. 20, No. 5, May, pp. 1-6, Washington, D. C.

GUNTER, Gordon

1956. Should shrimp and game fishes become more or less abundant as pressure increases in the trash fishery of the Gulf of Mexico? Louisiana Conservationist, January, pp. 11, 14-15, New Orleans, Louisiana.

MORROW, James E. Jr.

1951. Studies on the marine resources of southern New England. VIII. The biology of the longhorn sculpin, (Myoxocephalus octodecim-spinosus Mitchell, with a discussion of the southern New England "trash" fishery. Bulletin of the Bingham Oceanographic Collection, Vol. 13, Art.2, February, 39pp., New Haven, Connecticut.

VINCENT, Daniel B

1951. Potentialities for increased utilization of scrap fish and fish waste in the Gulf and Caribbean area. Proceedings of the Gulf and Caribbean Fisheries Institute, Third Annual Session, November 1950, pp. 52-55.

Slides for paper to be given at GSMFC meeting (10-20-60)

1. Quaker Oats petfood plant, Pascagoula, Mississippi
2. Fairhaven petfood plant, Gulfport, Mississippi
3. Mavar Shrimp and Oyster, Biloxi, Mississippi
4. Bluff Creek Canning Co., Van Cleave, Mississippi
5. Unloading dock, Empire, Louisiana
6. Typical petfood trawler
7. Petfood trawler unloading
8. Unloading with suction pump
9. Conveyor from dock to plant
10. Grinder
11. Mixer
12. Cooker after canning
13. Labeling machine
14. Petfood transport
15. Razorbelly and anchovy (Harengula pensacolae and anchoa sp.)
16. Anchovy (Anchoa sp.)
17. Menhaden (Brevoortia sp.)
18. Spanish sardine (Sardinella sp.)
19. Harvestfish (Peprilus paru)
20. Bumper (Chloroscombrus chrysurus)
21. Moonfish (Vomer setapinnis)
22. Flounder (Githarichthys sp.)
23. Pinfish (Lagodon rhomboides)
24. Batfish (Halieutichthys aculeatus)
25. Swellfish (Lagocephalus sp.)
26. Scorpionfish (Scorpaena sp.)
27. Lane snapper (Lutianus synagris)
28. Moray eel (Gymnothorax sp.)
29. Seahorse (Hippocampus sp.)

(COPY)

GULF STATES MARINE FISHERIES COMMISSION
St. Petersburg Beach
Colonial Inn
October 20-21, 1960

"RESEARCH PLANS OF THE TORTUGAS SHRIMP COMMISSION"

Robert M. Ingle, Director of Research
Florida State Board of Conservation
Tallahassee, Florida
and
Commissioner, Tortugas Shrimp Commission

The objective of the Convention of August 15, 1958, between the United States and Cuba is to develop and maintain the maximum sustainable productivity of the shrimp resources of common concern in the Gulf of Mexico. Research is needed to achieve this objective.

The attack on the problem resolves itself into three aspects:

1. Identification of the stocks of common concern and the area they occupy;
2. The dynamics of these populations, including their growth and death rates and the effect of the fishery on the stocks;
3. The effect of environment on the stocks.

The research proposed to be undertaken by the Commission and the estimated cost thereof is as follows:

1. Identification of the stocks of common concern and the area they occupy.
 - a. It is necessary to determine how far from the known fishing and nursery grounds the Tortugas population extends. It is now known that the nursery area extends at least as far north as Shark River, and it will be necessary to test whether shrimp from adjacent geographical areas contribute to the Tortugas catch. There is a break between the northern and western edges of the Tortugas and the Sanibel fishing grounds. It should be determined whether the shrimp on these and in the areas northward along the west coast of Florida are of the same or different populations. This can be determined by mark-recovery experiments. The estimated cost of this aspect is \$22,000. (at present, marking experiments are limited to the use of three vital stains. It is possible that these stains may be combined, thus increasing the number of experiments that can be carried on simultaneously, using spectrophotometer examination to identify the combination of stains and hence the experiment. A study to establish the mechanics of differentiating mixed colors is being undertaken by the Bureau of Commercial Fisheries without cost to the Commission).

(Ingle, #2)

- b. Information concerning distribution of shrimp and importance of nursery areas will be obtained by systematic sampling of the peripheral waters in the Florida Keys. This sampling also will add to our knowledge of seasonal movements and changes in abundance. The estimated cost of this phase is \$15,000.
 - c. Deep water distribution studies at a cost of \$10,420.
2. The dynamics of the populations, including growth and death rates, and the effect of the fishery on the stocks. This is fundamental and vital to attainment of the objectives of the Convention, and should be undertaken immediately. It can be approached from the study of catch records, and from tagging and marking experiments, and both should be used.
- a. Biometric studies:

More accurate statistical data is required, and it is recommended that accurate catch data be obtained of vessels fishing the Tortugas area. Sufficient personnel must be assigned to maintain frequent contact with the vessels and to sample catches. These records would be integrated with the present statistical system. The estimated cost of this project is \$28,000.
 - b. Estimates of total mortality by use of tags:

In order to make estimates of rates of total disappearance of shrimp, large-scale, short-term tagging experiments should be undertaken. These will complement mortality estimates derived from commercial statistics. This is estimated to cost \$28,000.
 - c. Development of marking techniques:

The use of tags in estimating growth and mortality rates required a measurement of the effect of such an attachment on growth, of deaths due to handling, of losses of tags, and of failure to report recoveries. A program should be designed to measure these sources of error. There is also need for the development of a new type of tag to replace the Peterson tag, which has obvious defects for use on shrimp. This study is estimated to cost \$5,000.
 - d. Study of gonadal development, to be done by Cuba, \$6,000.
3. The effect of environment on the stocks.
- a. This is the key to understanding natural fluctuations in abundance and the possibility of predicting such changes so the industry can adjust the level of operations to the supply. Concurrently with the hydrological survey now in progress there should be extensive biological sampling of the area for shrimp eggs, larvae. The cost for this work is estimated at \$20,000.

(Ingle, #3)

SUMMARY

1.	Identification of Stocks of Common Concern:	
	(a) Marking on nursery grounds	\$ 22,000
	(b) Mechanics of differentiating mixed colors	0
	(c) Sampling in shallow peripheral waters of Florida Keys	15,000
	(d) Sampling for deep water distribution	10,420
2.	Dynamics of the Populations:	
	(a) Biometric study	28,000
	(b) Estimate of total mortality by use of tags	28,000
	(c) Development of marking technique	5,000
	(d) Studies of gonadal development	6,000
3.	Effect of environment:	
	(a) Biological sampling for eggs and larval states and their distribution in relation to salinity, temperature and other factors	<u>20,000</u>
	Total	\$ 134,420

(COPY)

GULF STATES MARINE FISHERIES COMMISSION
St. Petersburg Beach, Florida
Colonial Inn
October 20-21, 1960

"IMPLEMENTATION OF THE MARINE SPORT FISHERY ACT OF 1959"

Paul E. Thompson
Chief, Branch of Fishery Research
Bureau of Sport Fishery and Wildlife
Washington, D. C.

When Dr. Ray Johnson spoke at your Spring meeting about the importance of marine game fishing and possibilities for research under legislation passed a year ago, there was no immediate or foreseeable prospect of commencing such work. Since then, the Congress decided we should proceed without delay and increased the President's budget accordingly.

The new law is very broad; its only limitations relate to appropriations and to fish migration. Congress said that not more than \$2,700,000 may be appropriated in any one year for the research and that the study is confined to migratory marine game fish. Thus there is plenty of scope in both directions for a full-scale program of research.

I brought with me the Bureau's prospectus for marine game fish research for all who are interested. Earlier, we mailed a copy to each State conservation agency. For those who have not seen it, the document includes background material such as legislative authorities and directives and a partially illustrated catalogue of the important marine game fish of the United States with notes on their distribution. Some of you may question the inclusion of certain species or groups of fish in the catalogue and I would refer you to the introductory statement for our reasoning. The prospectus also includes a very brief review of the marine game fish research in progress and something of its magnitude. We did not attempt here to describe the work of each State and University, partly because of doubt that we had fully current information on subject matter and status of each project, and partly because such information should properly be distributed by the agency or institution in such form as it desires.

Nevertheless, I should like to mention the very substantial contributions of the Marine Laboratory of the University of Miami to knowledge about southern game fishes. I do not know of any sustained game fish research in the other States, but much of the data collected by the Bureau of Commercial Fisheries and the State agencies and the marine research of the Universities undoubtedly will be useful in the eventual understanding of the game fish resource and its requirements.

The prospectus is bold enough to suggest what we should have accomplished after five years of research. One of these is that we should know the magnitude of the game fish catches by species, gear, area of capture, and effort, and should have established a system of collecting and reporting these statistics currently. Here the interstate commissions and the individual States must help if this goal is to be reached. As a start in this direction, we are negotiating with the Census Bureau for collection and machine tabulation of data on catches of marine game

(Thompson, #2)

fish by species as a supplement to the Bureau's 1960 survey of U.S. fishing and hunting activities, the second of a series of such surveys. Many of you will recall the 1955 survey which was widely quoted.

We made the first start on this "5-year plan," described more fully in the prospectus, with acquisition of a very substantial building on Sandy Hook, New Jersey for a research center. It is pretty well centrally located and spacious enough so that we can invite cooperating institutions and scientists to work with us there.

We have the beginnings of a staff of researchers, too. Dr. L. A. Walford - Bert Walford to many of you - has just taken over as director of the Center. He has had a great deal of experience in marine game fish research as his earlier books and scientific papers testify. And of course he worked for several years with this Commission in the development of marine research programs and reviews.

John Clark, who has been with me in Washington, and who has some 10 years of experience in marine research, is Dr. Walford's principal assistant. Several other experienced and younger biologists have been added to the staff.

First off, we plan an inventory of knowledge, study collections, sources of data already collected, and research facilities available. This will mean a canvass of marine laboratories, coastal Universities, research museums, and States agencies along the Atlantic and Gulf for collaboration, exchanges of information and student training. Also included will be investigation of the possibilities of collecting biological material and data through the cooperation of sport fishing boat captains and others and discussing with other Federal agencies the availability of unpublished data applicable to marine game fish research.

We further plan beginning a compendium of knowledge about game fishes - their behavior, distribution, spawning seasons and places, growth, foods, enemies, diseases, migrations, and tolerances to changes in temperature, salinity and other physical features of the environment. This we plan to revise continually and make available in serial form. This will be a necessary reference work for the marine biologist, but we expect it also to be useful to the marine angler as a guide to fish habits, fishing areas and seasonable abundance.

It should have another value as well as providing some of the vital pieces of the jig-saw puzzle of the estuaries. The dependence of so many of the Gulf game fish species upon the estuarine and inshore waters ties in nicely with the directive to undertake research on the sport fish. Here we think we can, with the support of the Commission and the assistance of the States and other agencies, help to provide the knowledge upon which is so necessary to understanding the effects of coastal civil works projects like those described to you this morning.

I want to extend a cordial invitation to each of you to visit the marine game fish center when you are in the vicinity to meet or renew acquaintance with the staff and to inspect the facilities which are being developed there.

GULF STATES MARINE FISHERIES COMMISSION

Mobile, Alabama
Admiral Semmes Hotel
Ballroom A
March 16 (Wednesday) and March 17 (Thursday), 1960

P R O G R A M

(Commission Chairman Hermes Gautier, Presiding)

9:00 AM REGISTRATION

9:30 AM CALL TO ORDER

INVOCATION

Reverend D. Holmes Irving, Jr., Rector
Trinity Episcopal Church
Mobile, Alabama

ROLL CALL

WELCOME ADDRESS

Will G. Caffey, Jr.
Senator, State of Alabama
Mobile, Alabama

THE NATIONAL SIGNIFICANCE OF THE MARINE SPORT FISHERIES

Raymond E. Johnson
Bureau of Sport Fisheries and Wildlife
Washington, D. C.

RECENT DEVELOPMENTS IN THE FIELD OF INTERGOVERNMENTAL COOPERATION
AS REGARDS NATURAL RESOURCES

Herbert L. Wiltsee
Council of State Governments
Atlanta, Georgia

11:00 AM RECESS

Fifteen Minutes

11:15 AM PLANS OF THE STUDY COMMISSION

Jerome F. Anderson
U. S. Study Commission - S.E. River Basins
Atlanta, Georgia

GUILTY OR NOT GUILTY - SOME COMMENTS ON SPORT FISHERIES AND COMMERCIAL
FISHERIES

G. Robert Lunz
Atlantic States Marine Fisheries Commission
Wadmalaw Island, South Carolina

12 Noon RECESS FOR LUNCHEON (No formal luncheon)

AFTERNOON SESSION

1:30 PM THE LOUISIANA OYSTER FISHERY DEVELOPMENT PROGRAM

James N. McConnell
La. Wild Life and Fisheries Commission
New Orleans, Louisiana

1:45 PM THE GULF MENHADEN INDUSTRY AND ITS PRODUCTS

Harry I. McGinnis
Wallace Menhaden Products, Inc.
New Orleans, Louisiana

2:00 PM PROGRESS REPORT ON GULF MENHADEN RESEARCH

Gordon Gunter
Gulf Coast Research Laboratory
Ocean Springs, Mississippi

2:15 PM MEMOS ON THE INDUSTRIAL FISH FISHERY

Travis D. Love
Bureau of Commercial Fisheries
Technological Laboratory
Pascagoula, Mississippi

2:30 PM GULF SHRIMP

Panel Discussion

(Merchandising Problems)

John C. Ferguson (Presiding)
St. George Packing Company
Fort Myers Beach, Florida

(Production Problems)

Joseph Ramos
Ramos Shrimp Company
Bayou La Batre, Alabama

(Diversification Potential)

Harvey R. Bullis, Jr.
Bureau of Commercial Fisheries
Pascagoula, Mississippi

(Progress in Federal Research)

George A. Rounsefell
Bureau of Commercial Fisheries
Galveston, Texas

3:15 PM RECESS

Fifteen Minutes

3:30 PM FISHERY ADMINISTRATIVE PROBLEMS

Panel Discussion

Howard D. Dodgen (Presiding)
Texas Game and Fish Commission
Austin, Texas

William C. Younger
Ala. Department of Conservation
Montgomery, Alabama

Ernest C. Mitts
Fla. State Board of Conservation
Tallahassee, Florida

Rudolph P. Easterly
La. Wild Life and Fisheries Commission
New Orleans, Louisiana

Chester Delacruz
Mississippi Seafood Commission
Biloxi, Mississippi

4:15 PM MOTION PICTURE: PROGRESS REPORT OF THE UNDERWATER STUDY OF SHRIMP
TRAWLS IN ACTION

Harvey R. Bullis, Jr.
Bureau of Commercial Fisheries
Pascagoula, Mississippi

ADJOURNMENT

Thursday (March 17)

8:30 AM COMMISSION EXECUTIVE SESSION BREAKFAST
to
12 Noon WALLACE S. PITTS ROOM

Commission Chairman
Hermes Gautier (Presiding)

SCIENTISTS' SESSION
BALLROOM A

Seton H. Thompson (Chairman)
Bureau of Commercial Fisheries
St. Petersburg Beach, Florida

9:00 AM COMMITTEE TO CORRELATE RESEARCH
AND EXPLORATORY DATA

Gordon Gunter (Presiding)
Gulf Coast Research Laboratory
Ocean Springs, Mississippi

10:00 AM SHELLFISH COMMITTEE

Robert M. Ingle (Presiding)
Fla. State Board of Conservation
Tallahassee, Florida

11:00 AM ESTUARINE TECHNICAL COORDINATING
COMMITTEE

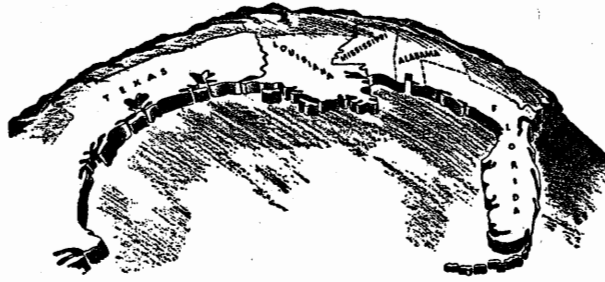
Theodore B. Ford (Presiding)
La. Wild Life and Fisheries Commission
New Orleans, Louisiana

12 Noon FINAL GENERAL SESSION
BALLROOM A

REPORT OF SCIENTISTS' SESSION Seton H. Thompson

REPORT OF EXECUTIVE SESSION Commission Vice-Chairman
Walter O. Sheppard

12:30 PM ADJOURNMENT



Gulf States Marine Fisheries Commission

312 AUDUBON BLDG., NEW ORLEANS 16, LA.

M I N U T E S

REGULAR MEETING

ADMIRAL SEMMES HOTEL

MOBILE, ALABAMA

MARCH 16-17, 1960

GULF STATES MARINE FISHERIES COMMISSION
312 Audubon Building
New Orleans 16, Louisiana

M I N U T E S

REGULAR MEETING, MARCH 16-17, 1960
Hotel Admiral Semmes
Mobile, Alabama

OFFICIAL ATTENDANCE OF COMMISSIONERS

	<u>Present</u>	<u>Absent</u>
<u>ALABAMA</u>	William C. Younger Will G. Caffey, Jr. W. C. Holmes	
<u>FLORIDA</u>	Ernest C. Mitts Vern Merritt	Walter O. Sheppard
<u>LOUISIANA</u>	Rudolph P. Easterly A. O. Rappelet	E. J. Grazzaffi
<u>MISSISSIPPI</u>	Chester Delacruz Hermes Gautier	Stanford E. Morse, Jr.
<u>TEXAS</u>		Howard D. Dodgen Wilson Southwell
<u>PROXIES</u>	James N. McConnell W. J. Cutbirth, Jr. Howard T. Lee	(For E. J. Grizzaffi) (For Howard D. Dodgen) (For Wilson Southwell)
<u>STAFF</u>	W. Dudley Gunn	

FORMER COMMISSIONERS PRESENT

Charles W. Bevis, Thomas A. Johnston, III, Bert E. Thomas

OTHER STATE FISHERIES REPRESENTATIVES PRESENT (Commission Committee Members
Underscored)

George W. Allen, I. B. Byrd, T. B. Ford, Gordon Gunter, Orren Logan, G. Robert
Lunz, Alfred L. Prechac, Jr., Lyle S. St. Amant, Percy Viosca, Jr.

FEDERAL GOVERNMENT REPRESENTATIVES PRESENT

Jerry Anderson, Philip A. Butler, Harvey R. Bullis, Jr., R. E. Johnson, W. A.
Haskell, Travis D. Love, Charles H. Lyles, George A. Rounsefell, E. Moret Smith,
Spencer H. Smith.

REPRESENTATIVES OF ASSOCIATIONS AND FIRMS CONNECTED WITH COMMERCIAL AND SPORT FISHING PRESENT

J. Lloyd Abbot, George Brumfield, Daize Cheramie, T. J. Collins, Jr., Peter J. DeBertatt, Ammon G. Dunton, D. L. Fender, John C. Ferguson, D. J. Ficarino, Cecil H. Fosdeck, Don R. Glover, H. R. Humphreys, Jr., Paul Kalman, Clerville Kief, Sr., John B. Lincecum, Wm. C. Lunsford, Jr., J. P. Martin, Harry I. McGinnis, W. S. Morrice, John Ray Nelson, P. N. Nesbit, Joe Pearson, J. S. Ramos, Ted S. Shepard, C. Z. Stevens, Jack T. Styron, Max W. Summers, C. W. Taylor, Roland E. Walker, Sr.

UNIVERSITY REPRESENTATIVES PRESENT

Everett Bishop, Ralph L. Chermock, Frank Chew, J. Y. Christmas, C. E. Dawson, W. J. Demoran, E. A. Fieger, Albert C. Jones, J. G. Mackin, Arthur F. Novac, K. M. Rae, Sammy M. Ray

CLERGY AND PRESS REPRESENTATIVES PRESENT

Rev. D. Holmes Irving, Jr., Ted Pearson

GENERAL SESSION, MARCH 16, 1960

Commission Chairman Hermes Gautier called the meeting to order at 9:40 AM and introduced Rev. D. Holmes Irving, Jr., who rendered the invocation.

Commissioner Will G. Caffey, Jr., extended a most cordial welcome to the group and spoke of some of the marine fisheries problems in Alabama. Copy of the Senator's address is herewith first attached.

Raymond E. Johnson, Chief, Division of Sport Fisheries, Bureau of Sport Fisheries and Wildlife, addressed the session on the national significance of the marine sport fisheries. Copy of the address is herewith second attached.

Herbert L. Wiltsee, Director, Southern Office, Council of State Governments, who was scheduled to speak on recent developments in the field of inter-governmental cooperation as regards natural resources, was unable to attend the meeting due to illness and an accumulation of work for the Southern Governors Conference.

→ Following a morning recess, during which time the delegates were coffee guests of the Gibbs Corporation, Jerome F. Anderson, Chief, Conservation Division, U. S. Study Commission, Southeast River Basins, spoke about the organization, purposes and activities of that commission. Copy of the paper is herewith third attached. A pamphlet issued by the S. E. Study Commission was distributed.

The next paper to be heard was presented by G. Robert Lunz, Chairman, Atlantic States Marine Fisheries Commission, and Director, Bears Bluff Laboratory. The paper which has as its subject; "Guilty or not Guilty" is, in copy, herewith fourth attached.

Charles H. Lyles, Bureau of Commercial Fisheries, using a series of large graphs, discussed the available data thus far collected in the detailed statistical program. An extract of the talk is herewith fifth attached.

Starting the afternoon session Chairman Gautier called upon James N. McConnell, Chief, Division of Oysters, Water Bottoms and Seafood, Louisiana Wild Life and Fisheries Commission, for a summary of the Louisiana oyster fishery development progress. An extract of the presentation is herewith sixth attached. The presentation was highlighted by the displaying of oysters of various stages of growth.

Harry I. McGinnis, Wallace Menhaden Products, Inc., presented a paper on the Gulf menhaden industry and its products. A pamphlet on the menhaden, which was prepared by the National Fisheries Institute for the menhaden industry, was made available to the delegates. Paul Kalman showed colored slides of a large exhibit prepared by the menhaden industry for display at fairs and conventions; its title being "Working Together for Conservation." Copy of the paper is herewith seventh attached.

A brief review of menhaden biology and work on menhaden at the Gulf Coast Research Laboratory, was given by Gordon Gunter, Director of that laboratory. Several species of menhaden were exhibited in glass jars. Copy of the review is herewith eighth attached.

Speaking on the subject; "New Developments in Industrial Fish Utilization in the North Gulf of Mexico" was Travis D. Love, Director, Technological Laboratory, Bureau of Commercial Fisheries, Pascagoula, Mississippi. Copy of the paper is herewith ninth attached.

John C. Ferguson, St. George Packing Company; Joseph S. Ramos, Ramos Shrimp Company; Harvey R. Bullis, Jr., and George A. Rounsefell, both of the Bureau of Commercial Fisheries, composed a panel to discuss Gulf Shrimp. Panel memos have been consolidated and appear herewith tenth attached. At the conclusion of the discussion the following telegram from Seton H. Thompson, Regional Director, Bureau of Commercial Fisheries, was read:

"In connection with special efforts Bureau of Commercial Fisheries assist shrimp industry in market promotion the accelerated program has shown the following results through January and early February 1960 1 distribution of 32,000 special fishery marketing bulletins to restaurants and institutions suggesting increased use of shrimp and including 4 shrimp recipes in 25 50 and 100 serving portions. 2 distribution in cooperation with the US Department of Agriculture and the southwest citrus industry of 30000 special fishery marketing bulletins featuring a tie-in of shrimp and lemons for institutional use. 3 arrangements for inclusion of shrimp in the USDA plentiful food list of March and emphasis on tie-ins with eggs and rice. 4 distribution of a 32-page special food editor bulletin for lent including 4 shrimp recipes to some 2000 food editors nutritionist dietitians etc. throughout the country. 5 issuance of 2 special press releases for national release featuring shrimp creole and shrimp jambalaya . 6 distribution of special fishery marketing bulletins for lent containing 5 recipes for shrimp to some 100000 school lunch managers. 7 distribution of special fishery marketing bulletins for lent with 2 institutional recipes in 25 50 and 100 serving portions one of which featured shrimp to some 550000 restaurant and institutional personnels. 8 presentation of 27 fish cookery demonstrations each including one recipe for shrimp to school lunch personnel in New Jersey and Florida. 9 accelerated showing of Bureau films "Shrimp Please" and "Shrimp Tips from New Orleans" during January. Please convey this to John Ferguson in the event information can be used in his discussions. merchandising problem shrimp panel Wednesday afternoon. Promotion program of course is continuing extent that funds and facilities permit."

A short recess following during which period the delegates were hosted to coffee by J. Lloyd Abbot of Abbot's Nursery.

The Fisheries Administrators panel, which was scheduled, was not heard since the hour was growing late and the Administrator Commissioners present; Messrs. William C. Younger of Alabama, Ernest C. Mitts of Florida, Rudolph P. Easterly of Louisiana and Chester Delacruz of Mississippi, indicated that they did not have any particular problems of broad interest to present.

The Chairman received no response on call for other matters to be presented.

It was announced that the underwater motion picture showing shrimp trawls in action, which was shown at the October 15-16 Commission meeting, would be run immediately following adjournment, by Harvey Bullis.

The meeting was adjourned at 5:15 PM.

In addition to the showing of the shrimp trawl picture, the delegates viewed the underwater action of otter trawls in the bottom fishery of the North Atlantic, and several spot TV cartoons which were designed to promote the sale of fishery products; such cartoons having been furnished by E. Moret Smith, who also exhibited during the meeting various sales media being employed by the Bureau of Commercial Fisheries in fishery products sales promotion.

Thursday (March 17)

The Commission Executive Session began at 8:30 AM with the serving of breakfast in the Wallace S. Pitts Room.

The Committee to Correlate Research and Exploratory Data met in open session in Ball Room A at 9:00 AM. The Shellfish Committee did not meet as scheduled. The Estuarine Technical Coordinating Committee was in session from 10:30 AM to 12 Noon.

A final General Session was called to order shortly after noon and Dr. Gordon Gunter, Chairman of the Committee to Correlate Research and Exploratory Data reported that the committee discussed the problem of related scientific data being too widely scattered; it being agreed that there should be more publications prepared which would gather related information under one cover. It was said that S. 2692 - Magnuson et als was discussed and that it was the feeling of the group that the bill should place greater emphasis on biological work. No committee action was reported.

Dr. Ted Ford, Chairman, Estuarine Technical Coordinating Committee, reported that the Committee had slightly amended then approved a Pre-statement Of Projects form for submitting proposed estuarine projects; the original of which the Commissioners had earlier viewed. Messrs. I. B. Byrd, Lyle S. St. Amant, Gordon Gunter, and George A. Rounsefell were reported to have been named as a ETCC Sub-committee to look into the matter of possible danger to the fisheries from insecticides. It was said that the Committee is continuing to look into the matter of having the estuarine maps reproduced and placed under a single cover. When so compiled the maps could be made available to interested groups and individual workers.

The Commission Secretary announced that the March 16-17, 1961 meeting would be held at Biloxi, Mississippi; that a resolution which provided for a Commission Estuarine Technical Coordinating Committee and defined its mission had been revised in committee and approved at the Executive Session; and that the matter of possible danger of insecticides to the fisheries was discussed and a motion passed which requests the ETCC to look into the matter and report back at the fall Commission meeting.

Chairman Gautier expressed the Commission's appreciation for the delegates attendance and issued a cordial invitation to the October 20-21, 1960 meeting at the Colonial Inn on St. Petersburg Beach, Florida.

The final General Session was adjourned at 12:30 PM.

Prepared by: W. Dudley Gunn
Secretary-Treasurer

M I N U T E S

Executive Session, Mobile, Alabama, March 17, 1960

The Commissioners, proxies W. J. Cutbirth, Jr., Howard T. Lee and James N. McConnell; George W. Allen, Charles W. Bevis, I. B. Byrd, John C. Ferguson, Theodore B. Ford, Raymond E. Johnson, Thomas A. Johnston, Charles H. Lyles, G. Robert Lunz, Harry I. McGinnis, George A. Rounsefell, Joseph S. Ramos, Ted A. Shepard, Spencer H. Smith and Bert E. Thomas, met for breakfast in the Wallace S. Pitts Room at 8:30 AM.

Following breakfast, Chairman Gautier introduced Ted A. Shepard who advised the group as to the progress of the proposed Federal shrimp legislation.

Charles H. Lyles was asked some questions regarding the statistical program and George A. Rounsefell answered some questions relative to the shrimp research program. It was stated that the Bureau of Commercial Fisheries will have available about \$45,000 more this year than last year for Gulf shrimp research; total to be available being approximately \$253,000. It was brought out that certain improvements could be made in the statistical program if additional funds could be made available. The mentioned \$45,000 will be used to conduct a basic ecological survey.

J. Lloyd Abbot of Mobile was recognized. He spoke briefly on the use of insecticides in connection with the Federal fire ant program. Below is a copy of the resolution which Mr. Abbot requested the Commission to consider. (Note: the resolution was not acted upon).

- "1. Whereas, the Congressional Committees were given a non-factual presentation which represented the imported fire ant to be a threat to agricultural and livestock production at the Committee Public Hearings in 1957, which non-factual presentation caused the Committee to set up an eradication program based on this insect, and
- "2. Whereas, this non-factual presentation is available for anyone to read in the permanent and published reports of these Committee Public Hearings, and
- "3. Whereas, the gentlemen who participated in making this non-factual presentation may have been led to actually believe the non-factual statements they made at these Public Hearings in 1957, and
- "4. Whereas, any Member of these Congressional Committees who heard this non-factual presentation, and was not informed to the contrary, would naturally have voted for an eradication program based on the imported fire ant, and
- "5. Whereas, a similar non-factual presentation was made to the Committees of the Alabama Legislature in 1957, resulting in the Alabama Legislature appropriating funds in 1957 for an eradication program based on the imported fire ant, and

"6. Whereas, at the Public Hearing held by the Ways and Means Committee of the Alabama House of Representatives on 7 October 1957, this Committee found out the true facts from Auburn University Research Findings concerning the imported fire ant, and learned that the imported fire ant is not only not a threat to agricultural or livestock production, but it is not even listed in the published list of the 20 insects in Alabama of most economic importance, and

"7. Whereas, these Auburn University Research Findings were of course supported by the unanimous opinion of the 52 experts (including a U.S. Department of Agriculture contingent of five) who attended the fire ant research meeting in Auburn, Alabama, in September 1958, and

"8. Whereas, the Reader's Digest on page 67 of its June 1959 issue reported this fact that not one of the 52 experts, when challenged to do so, would dare go on record as saying that the fire ant eradication program could be justified by damages to crops or animals, and therefore the whole world now knows that there is no justification for the imported fire ant "eradication" program, and

"9. Whereas, the Alabama Ways and Means Committee, acting upon these recognized and incontrovertible facts, immediately killed the unjustified Alabama appropriation for \$500,000.00 for continuing the proven completely unjustified "eradication" program based on the imported fire ant - and Alabama has approximately 50% of the infested acreage of imported fire ants in the entire United States, and

"10. Whereas, a number of men of integrity were misled into making non-factual statements which convinced the 1957 Congress and Legislatures that the imported fire ant is a threat to agricultural and livestock production, and

"11. Whereas, such men, when they find out the facts, if they are men of sufficient size - really big men - they are correcting their previous non-factual statements, and we consider Mr. C. M. Stanley, the distinguished and long time Editor in Chief of the Alabama Journal, Montgomery, Alabama (who is known over the whole newspaper world as a man of the highest integrity) to be an outstanding example or illustration of this fact or happening, and

"12. Whereas, for industry, business, agriculture, and the public to continue to be inflicted with all the terrific costs, hardships, and inconveniences of an unjustified control or "eradication" program, and its resultant unjustified and cruel quarantine - all now revealed by research findings to be unjustified, and recognized by the authorities to be unjustified - is outrageous, and

"13. Whereas, the federal and state control organizations are reported to be now planning to arrange some means of carrying on this completely unjustified program with federal funds alone, in those states where there is no state appropriation, and

"14. Whereas, for the federal or state governments to put out by any means a deadly poison insecticide which either immediately, or by the slow accumulation of the poison, is a threat to human health or life, or to the health or life of livestock or domestic animals (and in turn to the people who may eat the meat or drink the milk), or to the health or life of beneficial soil organisms, in connection with an unjustified control or eradication program, or to furnish

the poison insecticide in connection with such a control or eradication program, is not only completely unjustified, but is outrageous, and deplorable, and

"15. Whereas, for the federal or state governments to put out by any means a deadly poison insecticide which either immediately, or by slow accumulation of the poison, kills wildlife in connection with an unjustified control or eradication program, or to furnish the poison insecticide in connection with such a control or eradication program, is not only unjustified, but is also outrageous and deplorable, and

"16. Whereas, Auburn University Research Findings have shown conclusively the slaughter of wildlife by this unjustified "eradication" program, and has stated that it logically follows that if the eradication program is carried out over wide areas, as would be necessary for eradication, that the result would be a wildlife disaster of the first order, and

"17. Whereas, Mr. Donald L. McKernan, Director of the U. S. Bureau of Commercial Fisheries has testified that both shrimp and crab were highly susceptible to the poison used in this unjustified program, and where the poisons have drained into the estuaries and backwaters of the Gulf area, shrimps and crabs were affected, and that crabs have been "virtually eliminated" in some areas by insecticides.

"Therefore be it resolved by the Gulf States Marine Fisheries Commission at its meeting in Mobile, Alabama on 17 March 1960, that we request Senator Richard B. Russell, Chairman of the Agricultural Subcommittee of the Committee on Appropriations of the Senate, and the Honorable Jamie L. Whitten, Chairman of the Agricultural Subcommittee of the Committee on Appropriations of the House, to call Public Hearings on the federal appropriation bill which proposes to furnish funds for a continuation of the eradication program based on the imported fire ant, in order that these Committees may have an opportunity to obtain the true facts concerning the imported fire ant, and we request that this organization and all other persons concerned be given ample notice of these Hearings."

Guests were excused at this point to attend the Scientific Session.

Ted B. Ford, Chairman, Estuarine Technical Coordinating Committee, presented a revision of the Commission's original ETCC resolution (April 11, 1958), as was requested by the Commission at the Corpus Christi, Texas meeting of October 15-16, 1959. Following discussion, Mr. McConnell moved for adoption of the resolution. The motion was seconded by Mr. Lee, duly passed and is here-
with first attached.

Commissioner Rappolet moved for acceptance of the Minutes of the October 15-16, 1959 meeting. Commissioner Easterly seconded. The motion was duly passed.

The Mississippi Delegation announced its decision to have the March 16-17, 1961 Commission meeting at Biloxi. The Buena Vista Hotel was mentioned as a possible headquarters.

Coming under the heading of old business, the resolution which was offered at the New Orleans, March 19-20 meeting, and which requested legislative consent of each member state to authorize its marine fisheries agency to prohibit the landing of shrimp during certain seasons of each year, not to exceed

45 days, was discussed. The consensus was that no solution which would be fair and satisfactory could be worked out in this connection. Commissioner Mitts moved that the resolution be tabled and that the committee appointed to study the matter be discharged. Commissioner Caffey seconded the motion. On vote the motion duly passed. An exhibit showing the variations in maximum weight requirements for shrimp, and closed seasons in the Gulf States was prepared and distributed by the Secretary for possible use in the above connection.

The Abbot insecticides resolution, which is incorporated in these minutes was discussed. Chairman Gautier expressed the opinion that the Commission would be beyond its authority in requesting the Congress to conduct Hearings. However, he said that the possibility of insecticides harming the fisheries should be given consideration. No action was taken on the resolution. Commissioner Rappolet moved that the Estuarine Technical Coordinating Committee be requested to give the matter consideration and render a report at the October 20-21, 1960 Commission meeting. Commissioner Delacruz seconded. On vote the motion duly passed.

The subject of Commission finances, the Secretary reported that every effort was being made to conduct operations within the budget but that it was apparent that certain items of expense would exceed the forecast. He said he expected the Commission to have in the neighborhood of \$800 cash on hand as of June 30, to start the new year. Speaking of increased state membership dues, Commissioner Caffey said that the last session of the Alabama Legislature failed to bring the bill up for action. Chairman Gautier said that Commissioner Morse would put a bill before the current session of the Mississippi Legislature to increase that state's membership dues to \$3,500.

Commissioner Younger inquired as to the current price per cubic yard for mudshell in the several states and was given that information. These prices by states were given for new leases:

Alabama	10¢
Florida	15¢
Louisiana	12¢ *
Mississippi	10¢ (In 9 months will go to 15¢)
Texas	8 & 10 **

* Louisiana - Severance tax of 3¢ per cubic yard or 4¢ per ton, additional, goes to the Louisiana State Department of Revenue.

**Texas - 8¢ for 3/8 inch shell and smaller, loaded separately.
10¢ for a larger than 3/8 inch shell.

With no further business to be presented, Chairman Gautier adjourned the session at 11:45 AM and requested the Commissioners to assemble in Ball Room A for the final General Session.

Prepared by: W. Dudley Gunn
Secretary-Treasurer

RESOLUTION

WHEREAS, the number and magnitude of man-made changes in the estuaries, sloughs, marshes, lagoons and swamps that fringe our Gulf Coast have been increasing steadily to meet the needs of our growing population and our expanding industry; and

WHEREAS, these changing areas provide an essential and unique habitat for important game, sport and commercial fishes, shellfish, and wild furbearers; and

WHEREAS, there is definite need for a research program to provide a store of basic knowledge concerning the reaction of fin fishes, shellfish, migratory waterfowl, and marsh dwelling game and furbearers to changes in salinity, temperature, sedimentation, pollution, depth, currents and other environmental factors; therefore

BE IT RESOLVED that a new approach be taken to formulate, conduct and provide an intensive fundamental research program aimed at determining the complex biotic changes that accompany physical modification of the estuarine environment; and

BE IT FURTHER RESOLVED that such a program be undertaken separate and independent of any planned or heretofore approved development project and be coordinated as a cooperative effort between Federal and State agencies; and

BE IT FURTHER RESOLVED that a detailed program of estuarine research for the entire Gulf States Area be planned, including outline of projects, general procedures and cost estimates, for submission to the Gulf States Marine Fisheries Commission for approval and implementation; and

BE IT FURTHER RESOLVED that in order to prepare the above described plan and to insure coordination of technical effort, should the plan be approved and implemented, there be established an Estuarine Technical Coordinating Committee composed of two officials of each of the Gulf States to be appointed by the

executive director of the respective conservation agencies and two officials of each of the Bureaus of the Fish and Wildlife Service to be appointed by the chief of each Bureau; and

BE IT FURTHER RESOLVED that this committee be responsible to the Gulf States Marine Fisheries Commission for planning and reviewing the program from year to year, for maintaining free exchange of data, fostering the publication and dissemination of the results of its findings, and for making recommendations to each of the said Bureaus of the Fish and Wildlife Service and to the conservation agency of the respective and affected State concerning technical and project procedures as may be deemed necessary and expedient for a coordinated and sound program; and

BE IT FURTHER RESOLVED that in the event any State wishes to carry out its estuarine projects separately and distinctly from this program, then that (or those) state(s) will not be required to submit its program to the Estuarine Technical Coordinating Committee, but the state is encouraged to exchange any information or results with the Committee.

* * * * *

The foregoing resolution was unanimously adopted by the Gulf States Marine Fisheries Commission at a regular meeting held March 16-17, 1960 at the Admiral Semmes Hotel in the City of Mobile, Alabama, and cancels a somewhat similiar resolution which was adopted by the Commission at a regular meeting held April 10-11, 1958 at the Fort Harrison Hotel in the City of Clearwater, Florida.



W. D. Gunn, Secretary-Treasurer
Gulf States Marine Fisheries Commission

(COPY)

GULF STATES MARINE FISHERIES COMMISSION
Mobile, Alabama
Hotel Admiral Semmes
March 16-17, 1960

"ADDRESS OF WELCOME"

Will G. Caffey, Jr.
Senator, State of Alabama
Mobile, Alabama

It is a genuine pleasure for me to welcome you to Alabama and to my home city of Mobile for the Spring Meeting of the Gulf States Marine Fisheries Commission.....

I sincerely regret that I was unable to be with you at Corpus Christi last October for the Fall Meeting - but at that time, our Legislature was not only in session, but, as our Alabama people know, was engaged in some rather heated discussion and activity which made it impossible for me to get away.....

Although this meeting, as your schedule of activities clearly shows, is primarily one of business and the interchange of ideas and information relative to the promotion and protection of our marine fisheries in the Gulf of Mexico - I hope that you will find the time while you are in Mobile to enjoy some of our many and varied facilities designed for the entertainment and relaxation of our visitors and ourselves.....For although Mobile is a growing industrial metropolis we have not forgotten - and I hope we will never forget - our background of conviviality and gracious living.....Indeed, we are proud of the various appellations that have been given to our City.

Alabama's Only Port
The Azalea City
The Mother of Mystics
The City of Five Flags, and others

I truly hope that we will never acquire the "efficient status" of a cold and businesslike city - if in the process we lose our hospitality, friendliness, our good-will and co-operative spirit.....

I hope that you will have the chance to visit our State Docks and other port facilities; Dauphin Island, which is fast developing into the playground of the Gulf Coast; Bellingrath Gardens - the "Charm Spot of the Deep South" - whose floral beauty is only now emerging, having been delayed by the uncommonly cold spring.....And I hope that you will visit our fishing industry areas of Bayou la Batre, Coden, Heron Bay and Dauphin Island.....for there you will see - despite some improvement - an area generally suffering from an economic declension....

The situation presents quite a challenge to the members of this Commission and our technical advisors - for we - in the last analysis are not dealing only

(Caffey,#2)

in abstract scientific theories - but we are dealing in human lives..... Our seafood must be cultivated, harvested and processed by men, and these men and their families must eat, and pay their rent, and taxes, and notes, and provide themselves with the necessities of life. We must constantly strive to improve their standard of living, and yet at the same time preserve for future generations the benefit and enjoyment of the marine life which the Good Lord has seen fit to put on this earth....

And in many instances, it is to you - and your combined technical knowledge and information - that we as Legislators must turn for factual, impartial, truthful and sound advice on which to base our laws....For unfortunately, even among those most closely associated with the seafood industry, there is no agreement on many of the most important aspects of the problems with which we are faced.....

And yet I know that many of your most sincere efforts are not met with success - and you are disappointed and at time disgusted....But even the most earnest advocate of a proposal must learn to temper his advocacy with practicality - for people generally are resistant to change; and we must resort to education, demonstration and slow adaptability....

We in Alabama are particularly handicapped in regard to seafood conservation - primarily because of our geographical situation...Only two (2) of our counties border on the Gulf - Mobile and Baldwin - and only those two are primarily interested or concerned with the problem. Yet practically all of our counties are concerned with other functions of conservation - for example, fish and game, parks, forestry, etc.

Consequently, we experience - as I am sure some of the other states likewise experience - financial difficulties....There are many worthwhile projects which should be undertaken to strenghten and improve our seafood productivity - but which cannot be accomplished without financial aid....

During the last session of the Legislature we were successful in inserting in the general appropriation bill a provision allocating \$100,000 for the improvement of publicly owned oyster beds, and yet I have been informed by our Director of Conservation that the revenues coming into the seafood division are falling below the estimates, and that operations will probably have to be curtailed.....I am looking into the financial situation now, and hope that some solution can be found.....

But enough of our troubles.... I merely wanted to emphasize that we are seeking help and that we welcome your advice and suggestions...

Again let me say that it is indeed a pleasure to have you in Alabama. I am sure that our meeting will be productive; and in addition I hope that you will enjoy your sojourn with us and will return often....

GULF STATES MARINE FISHERIES COMMISSION
Mobile, Alabama
Hotel Admiral Semmes
March 16-17, 1960

(COPY)

"THE NATIONAL SIGNIFICANCE OF THE MARINE
SPORT FISHERIES" (Notes from extemporaneous talk)

Dr. Raymond E. Johnson
Chief, Division of Sport Fisheries
Bureau of Sport Fisheries and Wildlife
Washington, D. C.

First, I wish to express Mr. Janzen's regrets at not being able to attend your meeting today, and to mention my own pleasure at being chosen to fill his place on the program. Your southern hospitality has already shown in the way you have overlooked by northern accent and I hope it will continue to overlook any mistakes I may make here.

Since you all know Paul Thompson quite well, may I also say that he is unable to travel far because of a back that won't straighten out. That is why he did not come today. Most of what I will say now was provided by Paul.

The National significance of marine sport fisheries is slowly emerging as an interesting, surprising thing. Many of you remember the National Survey of Fishing and Hunting published by the Bureau of Sport Fisheries and Wildlife in 1956, which showed something of the importance of salt water angling. This Survey interviewed families in their homes who had fished in the oceans, coastal bays and estuaries, and coastal streams below tidal limits. The resultant information indicated that in 1955 there were 4.6 million salt water anglers, distributed 75 percent along the Atlantic and Gulf coasts, and 25 percent on the West Coast. These people amounted to 20 per cent of all anglers in the United States. They spent 58 million man-days of recreation on salt water.

Of the \$2 billion spent by fishermen all over the country in 1955, salt water anglers spent nearly \$500 million, or 25 percent, to obtain their recreation. The individual fresh water angler spent an average of \$77 that year, but the salt water angler on the Atlantic and Gulf coasts spent \$91, and on the West Coast he spent \$156. The greatest cause for this difference was in the amount spent for equipment other than fishing tackle.

The Texas survey made in 1957-58 on the salt water sportsmen brought fourth similar information, and added data on fish catches. The 748,000 Texas anglers of that period caught over 9 million pounds of redfish, almost 21 million pounds of speckled trout, 2½ million pounds of flounders, and 4-1/3 million pounds of drum.

A similar but less comprehensive survey made by New York State in 1956 showed their anglers taking 16 million pounds of marine species. In 1955 the Outboard Boating Club of America found that of the boats, motors, and trailers purchased in that year, 68 percent of the boats and 76 percent of the motors were bought primarily for use in fishing. The smaller motors were used on fresh water. The larger motors were used more on salt water and for water ski activities every where.

(Johnson , #2)

One of the most recent value studies was presented to your Corpus Christi meeting last October by Howard Odum. You may recall his report that the 200,000 acre Corpus Christi Bay area had an annual commercial, recreational, and sport fishery value of about \$250 per acre. This is a higher annual value than the income from most cultivated lands in the United States.

The 1955 Survey mentioned earlier will be repeated soon by the Bureau of Sport Fisheries and Wildlife. Salt water angler values will be sought again, with Gulf Coast data being compiled separately from the Atlantic Coast information. The work will be done by the Bureau of the Census this year. The next planned compilation of fishing and hunting data will be made in 1970.

The boom of marine sport fishing is of significance to more than just the coastal States. It is of National importance. Tennessee fisheries officials say that one-fourth of their licensed anglers visit salt water at least **once a year** They make, for example, long week-end trips past TVA and your northern Alabama lakes to get to Panama City for two days of Gulf fishing.

When Delaware takes creel checks on its bays and estuaries, the people found there have come from Pennsylvania mostly. At Astoria, Oregon, many of the anglers come from Idaho and other inland States. The number of people fishing in waters where no license is required is considerable, and possibly serious if these people have not purchased a license to fish in their native inland States.

The National marine sport fishery has another value besides its recreational and economic worth. No longer will the commercial fisherman fight his battle alone against pollution, alteration of shorelines, damaging of nursery areas, and the effects of siltation. The weight of sport fishermen and conservationists in general will now be added to the fight, too.

I have two more comments to make, both about the future of coastal angling. First, the demographers tell us that our population probably will grow older in average age some day when the current baby boom grows up, and when more people live to a longer old age. These folks will probably have fewer retirement worries because of Social Security and private investment plans. These trends for the future point to an increased popularity for marine sport fishing - because a greater proportion of our oldsters fish in salt water than they do in fresh water. This situation may arise from the leisure time these folks spend around the Gulf each winter.

Second, another trend of the future may not be so good. Our Nation's population is becoming more urban and less rural. Urban populations go fishing less often than folks who live in the country. But urban people take vacations and travel widely, and they may at that time go fishing just as often as their rural relatives. For that reason, the urban travel may not pose much of a threat to the sport of angling. The "growing giant" of salt water sport fishing will continue to grow.

If there is time remaining, and with the permission of Mr. Gautier, I would like to outline our present thoughts on implementing the Marine Sport Fishery Act of 1959. The public interest in this law, and in what we intend to do with it, has been intense. Although no money has been appropriated for this Act, and our plans are not firm, I can mention a few points.

(Johnson, #3)

One of the immediate jobs will be to learn just where this marine sport fishery is now located, and what species of fish are being taken in what quantities at what times of year. We must have a little survey of our own to lay out the present situation and find the major problems.

We do not think in terms of large laboratories or expensive facilities such as vessels. We hope to use existing facilities where possible.

We will need help in collecting data, of course, but we are not thinking of contracting out the research work. Rather, we are hoping to establish a fellowship program to support graduate students at colleges in the coastal States while they study many of the marine game fish problems. These fellowships might run for three years and include funds for both laboratory and field expenses. Many subjects lend themselves to this type of graduate study, and such a program will encourage future fishery workers, besides accumulating a great deal of useful basic knowledge at relatively low cost.

We are familiar with most of the marine sport fish work now in existence because of our D/J research program. Only about \$400,000 are being spent by the States under this program for marine research. California spends 34 percent of that sum, and 9 Atlantic coastal States spend about 50 percent. Florida is the only member of the Gulf States Marine Fisheries Commission which is using a part of its D/J apportionment for marine work, although Alabama's access site program has reached down to salt water beaches on occasion. In spite of D/J, and the work of several university and college laboratories (some of which are represented here today), there seems not to be a continuous sustained marine game fish research program in the Gulf area today. This is surprising considering the social, economic, and biological significance of marine sport fishing here.

What is to be the role of the GSMFC in accumulating knowledge of the game species? The dependence of so many of the Gulf game species upon estuarine and inshore waters is already known, and the Commission already has pioneered in urging estuarine research to meet the challenge of coastal developments. The appropriation of State and Federal funds for research is not always certain, however. When appropriations are received under the current Federal fiscal policy, it should be possible for the Bureau of Sport Fisheries and Wildlife to carry its share of the responsibility given to the Fish and Wildlife Service under the Consent Act of 1949, to be "the primary research agency of the Commission, cooperating with the research agencies of each State for that purpose."

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GULF STATES MARINE FISHERIES COMMISSION
Mobile, Alabama
Hotel Admiral Semmes
March 16-17, 1960

"THE SOUTHEASTERN RIVER BASINS STUDY"

Jerome F. Anderson
Chief, Conservation Division
U. S. Study Commission, Southeast River Basins
Atlanta, Georgia

The United States Study Commission for the Southeastern River Basins was authorized by the Congress in late 1958 under Public Law 85-850, which specifies how the Commission is to be organized, what its purposes are, and how it is to function. The Commission has 11 members and is made up of a Chairman, from the area, and a member from and selected by each of the States of Alabama, Florida, Georgia and South Carolina and a member from each of the principal land and water Federal agencies: Army - Commerce - Health, Education & Welfare - Agriculture - Interior - and the Federal Power Commission. All of the Commissioners are appointed by the President of the United States. Mr. J. W. Woodruff, Jr. is Chairman and Major General F. M. Albrecht is Vice Chairman.

There is little legislative history to indicate any congressional intent other than that expressed in the language of the authorizing act. The Act, developed from a bill introduced by Senator Russell with full support of the other Senators and Congressmen from the four States, passed through both houses of Congress unanimously and without debate. The Act specifically requires the Commission to prepare a comprehensive and coordinated plan for:

- (1) Flood control and prevention;
- (2) domestic and municipal water supplies;
- (3) the improvement and safeguarding of navigation;
- (4) the reclamation and irrigation of land, including drainage;
- (5) possibilities of hydroelectric power and industrial development and utilization;
- (6) soil conservation and utilization;
- (7) forest conservation and utilization;
- (8) preservation, protection, and enhancement of fish and wildlife resources;
- (9) the development of recreation;
- (10) salinity and sediment control;
- (11) pollution abatement and the protection of public health.

There is also a twelfth item which reads,

"And such other beneficial and useful purposes not herein enumerated."

Thus, the charter is very broad. Although the Law does not stipulate a time limit on the completion of the report, we are trying to complete the report expeditiously and within a reasonable time.

(Anderson, #2)

The area to be studied covers about 90,000 square miles in the States of Alabama, Georgia and South Carolina (plus a small area of about 200 square miles in North Carolina).

The Commission is directly responsible for all policy aspects and the Chairman of the Commission is charged with the administrative job of getting the work done. The authorizing Act details the responsibility to the Chairman for: the appointment, supervision of the personnel; the distribution of business; and the use and expenditure of funds; all of course within the general policies established by the Commission.

It is stated in the Act that it shall be the policy of the Congress to recognize the primary responsibilities of the States and local interests in developing water supplies for domestic, municipal, industrial and other purposes and that the Federal Government should participate and cooperate with the States and local interests in developing such water supplies in connection with the construction, maintenance and operation of Federal navigation, flood control, irrigation and multiple-purpose projects.

Throughout the Act there is the reference to both land and water resources. There have been many authorizations to study the water resources of an area and a number of them to study water and related land resources; but in our authorization Act, no distinction is made between the two types: None of the purposes in the Act is supplemental or subordinate to the others. Fish and Wildlife and Recreation have equal status with all other functions such as forestry, power, and flood control.

The Act gives certain guidelines to be followed in the formulation of the comprehensive and coordinated plan or plans, and I won't repeat them here but all are certainly important. The only one I will mention reads,

"The Commission shall seek to secure maximum public benefits for the region and the Nation consistent with the specific directions contained in Section 8 and elsewhere in this Act."

I gather that the intent of Congress in authorizing this study was for the Commission to take both a regional and a National approach in the making of the studies.

The United States Study Commission has some characteristics built into it by the authorizing legislation that make it unique and different from other planning groups. I mentioned earlier that both land and water resources are included and all functions have a coequal status.

A representative of the President said at the initial meeting of the Commission,

"Various groups have been organized to make similar integrated and cooperative investigations, studies and surveys. None of these cooperative groups have been successful in achieving broad fully integrated land and water resources planning. The United States Study Commission for the South east has an opportunity to avoid the pitfalls which plagued

(Anderson, #3)

its predecessors and to provide a calibre of broad, integrated natural resources planning not heretofore achieved. Your Commission is unique by virtue of its organizational provisions for Presidentially appointed and Federally paid local members representing the States of the area and having equal status with the representatives of the Federal agencies. The Commission is not inhibited by traditional agency or parochial approaches and loyalties. It has the fresh freedom and flexibility to adopt its own basic approach and to reject those procedures, practices, and criteria which experience has shown to be defective, ineffective, or unworkable. It has complete independence of action which should be jealously guarded. This broad responsibility also carries with it an obligation for sound statesmanlike decisions, untainted by favoritism, which will provide for the development of the resources of the area in a manner which will assure their maximum sustained use, both from the standpoint of the highest priority of use and of completeness of use, and their maximum contribution to the economic growth, strength and general welfare of the region as well as the nation, without regard to State or basin boundary lines."

The U. S. Study Commission is clearly described in the law as a planning group with no future responsibilities for construction or operation. I believe this was deliberate and is one of the aspects that sets the Study Commission approach aside as unique in recent attempts for planning resources development. The Commission and the Staff are automatically dissolved three months after the report is submitted to the President.

The professional staff is to be small in number but composed of highly qualified men who have a varied educational and experience background.

By design, the staff consists of some persons from outside the Southeastern area and some who are long-time residents or natives of the South. A deliberate attempt has been made to fill some staff positions with people who are familiar with the local Southeast Area and some with people whose experience in other parts of the United States would suggest new ways of solving resource problems.

Every effort will be made to have as much as possible of the actual work of the Commission done under cooperative agreements with Federal agencies, State organizations, and private entities. The Act authorizes us to work on this basis,, and we expect to utilize, as much as possible, existing know-how from these sources.

The authorizing Act also permits the Commission to initiate studies without further congressional approval, which provides flexibility in making studies which is not provided for many of the old-line agencies.

To get the job done, the U. S. Study Commission staff contemplates four overall steps. The first is that of taking basic inventory of the resources; second, analyzing and projecting needs, as of certain future dates; third, preparation of single-purpose alternatives from each functional viewpoint;

(Anderson, #4)

and fourth, formulating a single comprehensive plan. Although I enumerated these four as steps, I hasten to make clear that they are not distinct steps in the sense that we can say on a given Friday that we have completed step No. 2 and on Monday start step 3. Actually the steps are phases that will be proceeding concurrently in many instances.

As part of the basic data phase, we are making population projections of our area for the year 1975 and the year 2000, using several assumptions as to rates of development. We expect to have a pretty firm estimate by next summer. We have some preliminary figures for interim use now at hand.

Using those population forecasts on those time levels, we will estimate the various needs and requirements in these 11 or 12 functions for 1975 and 2000. A lot of our needs will be shown by curves which may cover considerably more years than just those two. Now in each case, determining requirements is going to take a lot of joint study to be sure that our assumptions and criteria are sound. For example in the case of power requirements, we will have to know what industry will be established in the area. Conversely, to determine what industry will be established here, we will have to know the availability of a number of items such as power, and at what cost. Consequently, when one talks about power requirements he has to make some fundamental assumptions as to rates, because at one rate there will be a lot more power required than at another rate. Also, estimating the industrial growth can become very complex, because many industries are not separate, but are tied together with others. So, in some cases, solutions will be had only after a series of "cuts and trys." The proper solution will call for the use of empirical factors and the exercise of the best judgment to be obtained. This is why we want to maintain close liaison with Federal, State and local experts in the several fields.

After we estimate the requirements, we will develop single purpose solutions for meeting the requirements in each of these 11 or 12 enumerated functions. In lots of cases, the computed needs or requirements will not be determined by considering only the Southeastern basins area. For instance, located as close as we are to coal deposits in Alabama and Tennessee and the gas and oil developments to the South and West of here, the area will probably import power in considerable quantities in the future. And the new hydro-electric power developed here will probably be largely for firming up peak demands. But we are not trying to get ahead of the power requirements study. By the same token, in forestry we will probably have considerably more slash pine and other timber than is needed in this geographic area, so our conclusion might be that the needs of this area from a National point of view will be to have forest products to export to other areas. It is not going to be merely the staking out of a few simple criteria and then employing sub-professional employees to turn the crank on the calculating machines and come up with the requirements. But as we go along, we do want to establish acceptable criteria on which we base these projected requirements.

We have set up as an intermediate step the seeking of solutions for each of the several functions even though they may serve only as temporary bench marks which will fade out of the picture in terms of the final report, other than as passing references as to what we would like to have done had we not had to make some adjustments in developing the best overall plan to serve all purposes.

(Anderson, #5)

When we do get to the point of developing an optimum overall plan and coordinating some of these competitive single purpose solutions which may be mutually contradictory, we may have some real problems. For example, the wildlife sponsors may want to keep certain areas as marsh lands for wildlife, and the soil conservation sponsors may want to drain that same area for pasture or for crops. The merging of the individual plans will take a lot of careful treatment and help from all.

As we finally develop the best plan, we will have to apply the acid test of analyzing each separable segment: first, to see whether it is justified; and second, whether there is any more economical way of providing a satisfactory available alternative.

After we work out an ultimate plan, we will program it by item. It may be that some of the items will be included in the ultimate plan even if they are found to be not economical and justified until the general forecast of industrial and other development reaches a certain point. Thus, we may have to keep in mind that any conclusion as to whether something is or is not economically justified has a relationship to the time at which it is to be considered for development. This is getting into project formulization concepts and I do not wish to imply that we plan to depart from the traditional concepts, except that we are going to be considering not only what is justifiable today, 5 years from now, ten years, etc., but we hope to put into the whole long-range program anything which we find, in the course of our projected program, would be justified at any time during the period of analysis, pointing out the conditions which would have to prevail before a ny marginal item were justified for actual implementation. Of course, you realize that the staff will merely make recommendations to the Commission, because the Commission has the final responsibility for the recommendations to be included in the report.

The staff coordinates its studies at the local level with all interested agencies engaged in land and water development work, as the study progresses. This is done by means of Public Hearings, advisory groups, with committees which include agency representatives who advise and prepare portions of the material needed in the study. Also informal comments from the local cooperating agencies on Work Plans and other material while the study is underway will help keep the studies realistic. Provision is made for a formal review of the finished report by all of the States and Federal agencies after the report is put together. Their formal comments will be considered by the Commission and will accompany the final report of the Commission when it is transmitted to the President and to the Congress.

The previous comments have been directed toward the overall operations of the Study Commission. In conclusion, it is appropriate to give you an idea of how work is progressing.

First of all the professional staffing is essentially complete.

Basic studies, which is the term we apply to studies of interest to two or more functions, are well along. Contracts were completed some ten months ago with four agricultural colleges, one in each of the States; and with Georgia Tech on non-agricultural studies.

(Anderson, #6)

A number of basic studies are underway by Federal Agencies such as a hydrology study by the Geological Survey and an inventory of reservoirs and impoundments jointly by the Corps of Engineers and the Department of Agriculture.

Studies in each of the enumerated functions are making progress. Work plans have been prepared, reviewed, revised and in many fields, work is already underway. For example, both the Corps of Engineers and the Department of Agriculture are studying appropriate phases of an overall flood damage analysis; the Forest Service is preparing information on the forests of the area; the Bureau of Sport Fisheries and Wildlife has started a study of wildlife habitat; the Bureau of Commercial Fisheries has made a start on studies, and so on across the board.

Functional Committees have been organized and are actively participating and aiding the Study Commission.

Four Public Hearings were held last November - the testimony and information presented for the record are being carefully analyzed by our technical specialists and by our group of area planners. The hearing held at Tallahassee included a statement by the Secretary of the Gulf States Marine Fisheries Commission.

The peak year for our basic and functional studies will be fiscal year 1961, starting this coming July. Our basin and comprehensive planning are underway now but will reach a high point after the basic and functional material is at hand, thus the planning activity will build up in the latter half of fiscal year 1961 and will peak in fiscal year 1962. Our target is to have a draft of the report prepared by June 1962.

(C O P Y)

GULF STATES MARINE FISHERIES COMMISSION
Mobile, Alabama
Hotel Admiral Semmes
March 16-17, 1960

"GUILTY OR NOT GUILTY"

G. Robert Lunz
Chairman, Atlantic States
Marine Fisheries Commission
Mount Vernon, New York

and

Director
Bears Bluff Laboratories
Wadmalaw Island, S. C.

The people along the Gulf Coast all seem to belong to a Booster's Club, So maybe my impression that the millennium has reached this area is based on mild propoganda. The rumor is that your sports and commercial fishermen fight together to solve common problems which affect the fisheries. Along our South Atlantic Coast the millennium is just a nebulous dream. Our sports and commercial fishermen just fight together, period. We still live in the Dark Ages and knowledge is often suspect as witchcraft or payola.

Often fisheries fights are just noise, but in some cases they end in punitive measures. As an example there are twenty laws to the South Carolina Code dealing with shrimp. These do not include the tax laws. Of the twenty, three are definitely conservarion measures. Nine give descriptions, designate authority or specify penalties for violations, and eight are restrictive measures pushed through by pressure groups.

When one of these Hatfield-McCoy wars break out, Reason often takes flight. I have heard a South Carolina trawlerman testify before a legislative committee that he never catches small fish but Georgia boats working along side of him in South Carolina waters slaughter small fish. I have heard sports fishermen plead eleguently for a sanctuary to save mother shrimp and baby fish along the ocean beach and end his plea with the statement that "the noise of those stink diesels is louder than the surf and I can't sleep."

Are these commercial fishermen really guilty or not guilty of the crimes of which they are accused?

I am no longer a young man. I may not live to see the final answer for this is an old, old fight.

The Secretary of the Atlantic States Marine Fisheries Commission has supplied me with a bit of verse written in 1589

Fishing, if I, a fisher protest,
Of pleasure is sweetest, of sports the best,
Of exercise the most excellent
Of recreation the most innocent;
But now the sport is marred, and what ye why?
Fishes decrease, and fishers multiply.

(Lunz, #2)

Michael Graham of England writes that in 1375 the Commons petitioned the King of England "that the great and long iron of the wondyrchoun (trawls) runs so heavily and hardly over the ground when fishing that it destroys the flowers of the land below waters there."

Guilty or not guilty, fishermen have been accused for a long time.

Objectively, if that be possible, consider competition for fishes between a shrimp trawler and sports fishermen. My discussion must be based on experience in our South Atlantic Section. Your Gulf area sportsmen may place emphasis on other species of fish.

If you have ever stood on hard packed sand and watched shore bound surf having its mares tails combed by an offshore wind, if you have ever hung and caught a bronzed comet called a channel bass, you will understand why this fish is royalty. If you don't catch a bass are you justified in accusing shrimp trawlersmen of catching them all? Here is some evidence, if it pleases the Court.

In the more than a decade during which Beaf's Bluff Laboratories has been conducting continual trawling, two channel bass have been taken in our experimental nets. In the past several years commercial fishermen have reported catching two in otter trawls

Even more sought after by sportsmen is the winter or speckled trout. There is no competition between the two kinds of fishermen for this fish. From 1953 through 1959 we have made 1,082 experimental trawls in off shore and inshore waters where shrimp trawlers can legitimately operate. A total of 70 specimens of winter trout have been taken in these trawls: 7 one-hundredth trout for each trawl. On the other hand newspaper accounts are frequently telling of catches of 100 trout in a single afternoon by a single sports fisherman.

Likewise, trawlers simply do not catch striped bass, sheephead, cobia or tarpon. There is no direct competition here between fishers for fun and fishers for funds.

But both types of fishermen do take croaker, spot, king whiting, summer trout (*C. regalis*) and flounders. Here there is competition, and here is material for such speeches as "Look what happened to the Buffalo." "Remember the Passenger Pigeon." I once heard a paid advocate of sports fishermen orate that if trawling was allowed to continue, his grandchildren would have to visit a museum to see what a croaker and a whiting looked like. He said he hoped to live to see commercial fishing outlawed just as market hunting was. The poor fellow died shortly afterward and despite what you may think, his throat was not cut. He died of a heart attack.

Are shrimp trawlermen guilty of wiping out these "competitive" fishes? If so, their own catch records should reflect the downward trend and each year they should catch less and less. Go to the Fish and Wildlife's landing statistics. In South Carolina, in the last forty years, the harvest of these fishes has fluctuated but the catches of all have increased. For example 50 percent more whiting and 200 percent more summer trout are being landed today than four decades ago. This may be weak evidence since the effort to catch these fish has probably increased but the point is that these fish aren't all gone yet.

(Lunz, #3)

The fight continues.

Many a boxing match has been won by shifting footwork. If you've ever slugged it out with a convinced conservationist, you've had him change pace on you. He shifts from "They catch all our fish" to "I would not object if they could sell their fish, but just look at the thousands and thousands of tiny baby flounders they catch in every drag."

Well, we've looked. For some years we've been collecting information on just this sort of thing at Bears Bluff Laboratories. The results of this study have just been published. The majority of flatfishes caught in trawls along our coast are worthless because they are small; they are small because they have reached the limit of their growth. If they lived to rival the years of Methuselah they still would be small and worthless. Man can coin phrases that all men are created equal but God made fish first, and God created them different. In over a thousand trawl hauls in which a total of 12,281 flatfishes was caught, only 886 were of the desirable species.

The fight continues and there is a lull in the storm only long enough for the wind to shift from northwest to southeast.

"This continual trawling," testifies the accuser, "stirs the bottom, keeps fish from spawning, kills eggs of crabs, fishes and shrimp. Nets sweep everything away - nothing escapes. There is no place to hide. Doom."

The pity of it is that these utterances sound convincing because they are so sincerely stated.

Is the trawl net really guilty or not guilty?

Some of your own Gulf Coast biologist - Gowenlock, Gunter, Humm, Ingle, Miles, Viosca - have contributed scientific evidence which points to "not guilty." Francis Taylor made a survey of the literature for Bears Bluff Laboratories in which he lists fifty-nine reports dealing with this subject. One and only one of those papers would give comfort to the attorney for the plaintiff. For the betterment of his case he would almost have to side step the other fifty-eight.

Along the southern coast of my State, this dreary battle between fishermen has waxed and waned, waned and waxed. A small sound next to the Georgia line has been opened to trawling then closed to trawling see-saw-like so many times that it is hard to keep track of just what its status really is. As of this year it is open to shrimp trawling from mid-September to mid-December. With the happy unconcern of a small puppy crossing the street through an army parade, Bears Bluff Laboratories has consistently taken trawl samples in this body of water, closed or not. We could confound you with the information we have gathered there. The data have confused us. After one opening and closing, I compared the catch records. After another opening and closing another staff member at the Laboratory tried his hand at reaching a conclusion. Now still a third student of marine fisheries is trying to find out what happened. We all come up with the same general answer: Nothing happened. The abundance of fishes fluctuated up and down, season to season, year to year. Opening or closing the sound to trawling has no clear cut demonstrable effect on the abundance of fish. Heavy rains and unseasonable cold are reflected in our catch records but not opening or closing. Apparently the net of fishes which inhabit

(Lunz, #4)

this sound is warped and woofed of so many fibers, so many colors, that the removal of one thread - commercial fishing - does not destroy the pattern.

The biblical prophet Isaiah (Chap. 11) has said that ^{the} millennium will come when the earth shall be full of the knowledge of the Lord as the waters cover the sea. Then the wolf will dwell with the lamb, the leopard shall lie down with the kid, the cow and the bear shall feed together. Let us hasten this day.

We on these two great fisheries commissions, the Gulf and the Atlantic, do not want to stop the activities of Cape Canaveral - who knows, if the Russian trawlers haven't ruined it, there may be good fishing on the dark side of the moon. However, if we had just the cost of one moon-shot we could hasten the day when knowledge would tell us truly whether the commercial fishermen are guilty or not guilty.

Certainly we do not want to discourage any research on the larval stages of Amphipods - this knowledge might strengthen the theory that ontogeny recapitulates phylogenetically. But it seems to me that we have an obligation to speed up the gathering of information and diffusing the knowledge which will settle this age old question and let all fishermen join forces against such common enemies as pollution, changing environment, and pesticides.

(COPY)

GULF STATES MARINE FISHERIES COMMISSION
Mobile, Alabama
Hotel Admiral Semmes
March 16-17, 1960

"GULF SHRIMPING TRENDS"

Charles H. Lyles
Supervisor, Fishery Marketing Specialist
Bureau of Commercial Fisheries
New Orleans, Louisiana

A few days ago Mr. Gunn called and requested that I prepare a short discussion of the major trends developing in the Gulf shrimp industry for this meeting. The preparation of sufficient graphs to demonstrate the major trends is a time consuming task for which the Branch of Statistics at New Orleans is not properly staffed to handle. However, we have prepared a few charts which you see on the blackboard demonstrating some of the major trends over the past years.

You will note from the bar graph chart three headings for the three years, 1956, 1957 and 1958. To the left of the chart you can see the total catch of shrimp in millions of pounds heads-off. The base figure from which we must begin is 1956. In 1957 there was a slight decline. In 1958 there was somewhat of a recovery, and while the 1959 figures were not available in time for this chart, there was a more remarkable recovery in total catch. The States of Texas, Louisiana, Mississippi and Alabama registered substantial increases in 1959. Florida alone declined. The second heading of this table deals with the shrimping time in thousands of days for the three years, 1956, 1957 and 1958. Complete data for 1959 are not available at this time. You will note from the base figures of 1956 there followed a slight decline in the shrimping time in 1957, and an increase in 1958. We believe that the shrimping time in thousands of days has gone up in 1959, but the data are not yet complete.

The third heading of this chart shows the average catch per day, that is, 100 pounds in 24 hours. 1956 is again the base figure, and while the total catch declined along with the shrimping time in 1957, there was a remarkable increase in the average catch per day in 1957. Significantly, while the total catch and shrimping time increased in 1958, the average catch per day declined. While the data are not complete for 1959, we are reasonable sure that the average catch per day again declined despite the total increase.

The Branch of Statistics has been engaged in this detailed shrimp study for a little over four years during which time we have recorded by trip the landings of each vessel fishing in the Gulf of Mexico. Fishing craft are interviewed for area of capture, the quantity of shrimp taken, the size and species composition and the area fished. We have accumulated a substantial quantity of data which could be readily utilized by the several States bordering on the Gulf of Mexico. The nature of this utilization could perhaps take the form of graphing the production and effort by areas to obtain the information on the general trends in the fisheries. As an example of this utilization, I have taken two of the areas in the Gulf of Mexico, namely Area 11 (formerly Area 15) and Area 19 (formerly Areas 23 and 24). Area 11 lies immediately south of the Mississippi Gulf Coast off Horn

(Lyles, #2)

Island, and is prosecuted principally during the summer months by both a local and a transient fleet. The broken lines on the graph indicate the days fished and the solid lines indicate the quantity of production. You will note from the graph that the principal season of this fishery is from June through September. Furthermore, the graphs indicate that during the spring months there is little effort expended on these grounds, but with the coming of Spring the yield per days fishing increases rapidly and there follows an obvious concentration of the fleet on these grounds so that the effort expended rises rapidly, in most cases more rapidly than the yield per days fishing.

You will note further that the production and effort on these grounds have followed the same general trend as the Gulf in general. 1959 was the peak year of production in both areas. The two areas were selected (Area 11 and Area 19) because they support a large migratory fleet. I should like to point out that this vast backlog of statistics which we have collected over the past four years could and should be utilized by the various State agencies to determine important trends in the fisheries. If the material were graphed off it could be utilized in discussing proposed changes in shrimp laws or regulations and in the enactment of new legislation.

GULF STATES MARINE FISHERIES COMMISSION

Mobile, Alabama

Hotel Admiral Semmes

March 16-17, 1960

"THE LOUISIANA OYSTER FISHERY DEVELOPMENT PROGRAM" (Notes
from extemporaneous talk and discussion)

James N. McConnell
Chief, Division of Oysters,
Water Bottoms and Seafood
Louisiana Wild Life and Fisheries Commission
New Orleans, Louisiana

Louisiana's largest planting of shells in the Commission's history was accomplished in May and June of 1959. A total of 50,000 cubic yards of shell was planted in two areas. The average set exceeded 80% while in some sections the set ranged as high as 92%. (Oysters of various stages of growth, taken from the planted areas, were exhibited). Success of the plantings indicate a possible future pattern for yardage to be planted and area selectivity. A good set was also obtained on some 7,300 barrels of oyster shells replanted in Louisiana waters by Mississippi packers. The Mississippi packers paid for the planting. Louisiana supervised the planting. Louisiana contracts all shell planting and supervises such planting to be assured that the size shells and other contract specifications are met.

Clam shells are usually better when used as "cultch" provided the proper type of hard bottom is obtainable so that the shells will not settle into the mud.

The price for oysters per gallon has not gone up in proportion to the decline in production. Production per acre of leased planted bottoms is down. The lessee counters by keeping his operation small, using a dredge and selling a good portion of the harvest as steam stock. A large volume of counter oysters served in Louisiana is now coming from Texas.

The cost per acre for leasing Louisiana oyster bottoms is \$1.00 per year. The Commission is authorized to charge up to \$5.00 per acre. For the sake of protection, a lessee generally acquires more bottom than he actually works.

As to an occasional complaint of an oily taste in some oysters, this can be expected because of the very large oil production in Louisiana. However, the Commission maintains a close surveillance for leakages and the oil companies have been most cooperative in this and other matters related to the oyster industry.

(COPY)

GULF STATES MARINE FISHERIES COMMISSION
Mobile, Alabama
Hotel Admiral Semmes
March 16-17, 1960

"THE GULF MENHADEN INDUSTRY AND ITS PRODUCTS"

Harry I. McGinnis
Wallace Menhaden Products, Inc.
New Orleans, Louisiana

Today, it is my pleasure to present you with a brief history of the menhaden industry in the Gulf of Mexico.....How it was started.....how we operate what type of products we manufacture and, most important, the important position our industry occupies in the American economy.

I am confident that all of you are familiar with the menhaden but for the benefit of any visitors who may be in our audience, I shall give a quick explanation. The menhaden is one of the many members of the herring family and the most abundant and prolific species of fish that swim the seas. Menhaden have flat, silvery sides and very narrow bodies, and are usually found in extensive schools numbering in the hundreds of thousands. The menhaden has no teeth and obtains food by straining huge quantities of water through the hair-like projections of its gill structure, thereby extracting the microscopic organisms on which it lives.

In the Gulf of Mexico, our fishing season usually begins in mid-April and extends until early November when the first cold blasts of winter send the fish into deeper water where it is impractical to attempt catching them.

There are three principal products derived from menhaden.

These are fish oil, fish meal and fish solubles.

Fish oil is used as a basic ingredient in hundreds of consumer items ranging from rust proof paints to lipsticks and other cosmetics. It is also used in leather tanning, in the manufacture of high tensile steel, and in the manufacture of linoleum. Much fish oil produced from menhaden in the United States is shipped abroad to Germany and other European countries which use the oil to make margarine.. However, in this country, little or no menhaden oil is presently used directly for food purposes.

Fish solubles are used as additives to high protein poultry and animal feeds, and, frequently, as an important ingredient in liquid plant foods.

Fish meal, our most important product, is sold in great quantities to feed manufacturers for use in poultry and animal feeds.

As early as 1910, menhaden processing plants were operating in the Gulf of Mexico. These pioneer factories were situated at Port St. Joe and Fulton, Florida, and at Corpus Christi and Port Arthur, in Texas. The hurricane of 1911 wiped out all the Texas factories except the one in Port Arthur.

(McInnis, #2)

In the first days of the industry, menhaden were used exclusively for fertilizer. The big breakthrough came in 1929 when experiments proved the wisdom of using fish meal in high poultry feed. The only trouble was that the quality of this early meal was very low. As soon as the quality improved, the market for the meal increased by leaps and bounds.

This occurred in 1932 when the industry finally developed a stable product. From that time on, we have maintained an increasingly high standard of quality control, constantly checked by professional chemists employed in our manufacturing plants.

If my records are correct, the first menhaden plant in Mississippi was established in 1929 in the vicinity of Moss Point. A relatively modern plant was set up at Port St. Joe in 1935. The first Louisiana plant was established in Cameron in 1935. The second Cameron plant was opened in 1946, following the close of World War II. In 1947, two additional plants were established in the Moss Point - Pascagoula area. In 1949, a plant was re-established in Cameron and in this same year, the first plant opened at Empire, Louisiana. The second Empire plant went into operation in 1950.

It is most interesting to trace the evolution of the menhaden industry and see the vast changes which have been made in the fishing and manufacturing procedures.

In the early days, the biggest menhaden vessels measured somewhere around 100 feet, and were powered by steam engines.

The two purse boats aboard each vessel were propelled by oarsNorwegian steam power.

The plants themselves were extremely crude in comparison to the modern, highly efficient factories we have today. As I mentioned previously, the only thing they produced was fertilizer.

In marked contrast, the boats and factories today are marvels of scientific ingenuity.

The modern menhaden fishing vessel, may be as large as 200 feet, although the majority are somewhere around 150 feet. Wooden construction was given way almost exclusively to steel, and diesel engines long ago replaced steam. The purse boats are propelled by gasoline or small diesels.

No longer are the fish brought aboard the bigger mother vessel by the old fashioned dip or brailing net. Instead, they are sucked into the hold by powerful pumps and removed from the hold in the same way. Refrigeration of the entire storage compartment has had a remarkable effect in reducing fish spoilage and increasing the quality and quantity of the yield.

In the old days, the liquid residue left over after the oil and meal were separated was pumped overboard as waste. Known as "stick water;" this valuable liquid is now passed through a complicated vacuum process which reduces the water content to 50% resulting in what we call fish solubles.

(McGinnis, #3)

Operation of a menhaden plant and fishing fleet requires a tremendous investment of money and know-how. The average menhaden vessel carries a crew of 20 net handlers in addition to the Captain, the engineer, pilot, mate and cook.

We must hire airplane pilots to fly the small spotter aircraft which pinpoint the location of the fish schools for the boats.

Our plants must be staffed with skilled personnel including diesel engineer mechanics, aircraft mechanics, carpenters, machinists, electricians, welders and chemist. In addition, we require a large supply of unskilled labor to work in the warehouses and to perform the more menial jobs.

The economic contribution made by a menhaden plant to the surrounding community in terms of jobs and dollars is astronomical, especially so when you consider the vast quantities of fuel, food and so on that the plant and its boats consume.

Educating the public to the importance of these contributions has been one of the principal tasks for the Menhaden Advisory Council for the Gulf of Mexico, an organization that I have the honor of serving as chairman.

The Council, which is composed of the five principal menhaden companies operating in the gulf, is basically a public relations organization aimed at increasing the public's knowledge of the menhaden industry and thereby causing an awakening of interest in the industry and the important part it plays in the American economy.

During the past year, for example, the Council sponsored a large exhibit which was placed on display at the Louisiana State Fair in Shreveport, at the Orange Festival in Buras, Louisiana, and in Golden Meadow, Louisiana where it was used as one of the principal visual aids in a special educational class conducted under the auspices of the Louisiana Wild Life and Fisheries Commission.

More than 600,000 men, women and children viewed this exhibit which was constructed around the theme of the importance for cooperation and understanding between sport and commercial fishermen.

(Show slides of exhibit)

Like many other commercial fishing industries, we menhaden people are frequently beset by grave problems. Occasionally, some sportsmen with no knowledge whatsoever of the industry and its operations will ignite a spark of public protest and attempt to influence the passage of legislation which would limit the areas where we can fish. At other times, we have been threatened with unfair taxation which, if adopted into law, would drive the industry out of business, resulting in the loss of many jobs and revenue.

At present the most serious threat facing the menhaden industry is that of foreign imports, particularly those coming into the United States from Peru and Chile. These two countries are now selling fish meal - delivered to the feed mill in the United States - at a price which is only a dollar or two above what it costs us to produce the same ton of fish meal here at home.

(McGinnis, #4)

This is virtually the same problem which faces the shrimp industry, and it is equally as serious. The volume of imported fish meal entering this country from South America has practically doubled in the past two years and where it will stop, nobody knows.

Exactly what the answer is to this problem is something for which we are diligently searching. We are not too hopeful about help from the Federal Government in the form of tariffs or import quotas, especially in view of President Eisenhower's recent visit to South America and the Administration's sudden awakening of interest in Latin America.

In other words, we feel that we may have to fight this battle within the industry itself by influencing the foreign producers to the folly of glutting the American market with cut-price fish meal. We are hopeful we can do this by showing them that they are also being injured in the process.

The brightest ray of hope for the menhaden industry, and for all fishing industries, lies in the so-called population explosion which is presently taking place.

With the conquest of disease progressing at such a rapid pace both here and abroad, our scientists tell us that in a few short years, mankind will be faced with a serious problem of having enough land to grow sufficient food to feed the teeming masses of people.

As the situation continues to grow and develop, man will turn to an increasing extent to the harvest of the sea.

It is our hope that the menhaden industry will find itself able to contribute to that harvest, now and in the future, for the good of mankind.

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GULF STATES MARINE FISHERIES COMMISSION
Mobile, Alabama
Hotel Admiral Semmes
March 16-17, 1960

"A BRIEF REVIEW OF MENHADEN BIOLOGY AND WORK
ON MENHADEN AT THE GULF COAST RESEARCH LABORATORY"

Dr. Gordon Gunter
Director, Gulf Coast Research Laboratory
Ocean Springs, Mississippi

The studies of the menhaden at the Gulf Coast Research Laboratory began with the signing of the contract in May 1957. Initial expenditures were quite small and the work did not really get started until August. The first accomplishment under the program was the writing up of a bibliography of the menhaden. This was first issued as a mimeographed report, but for various reasons it was withdrawn and I am told that it will be published as a paper in collaboration with Fish and Wildlife Service personnel who are working on the biology of the Atlantic menhaden. Publication is due next month.

The remainder of the work under the menhaden contract was not precisely stipulated, and that was a wise provision because the biology of the menhaden was not well known. However, we were specifically asked to do two things. One was to draw up a summary of review of previous work on the menhaden, and the second was to carry on racial studies of the Gulf species. The review paper has been written and re-written and finally re-submitted to the Fish and Wildlife Service a few weeks ago.

At this time I should like to give you just a few highlights concerning the information which has been brought together. The menhaden fishery began in the middle Atlantic states in the early 1800s. Originally the oil was pressed from rotting fish. Following the Civil War the menhaden fishery was introduced into North Carolina by northern soldiers who had observed the vast abundance of the fish in that area. The Gulf menhaden fishery is comparatively new, relative to the Atlantic fishery. It first attained high level production in 1947. The menhaden plants are found in east Texas, Louisiana and Mississippi, and approximately ninety percent of the Gulf production comes from Louisiana waters. In 1956 and again in 1959 the Atlantic and Gulf menhaden production exceeded two billion pounds, and this is the only fishery in the United States which has produced two billion pounds per year. The Gulf menhaden production fluctuates between about twenty-one to thirty-four per cent of the total.

There are three species of menhaden on the South Atlantic coast and three in the Gulf of Mexico. Brevoortia brevicaudata was taken only one time off Noank, Connecticut in 1870. Brevoortia smithi extends from North Carolina to Florida waters and is a fine or small-scaled species which is not very abundant and does not play a great part in the fishery. The late Dr. Samuel F. Hildebrand, who described the species, also discovered it in the waters of the Gulf of Mexico, along the Florida peninsula, and this discovery was independently repeated by Dr. R. D. Suttikus of Tulane. I discovered another Gulf species in Texas waters,

(Gunter, #2)

which was close to smithi, and turned it over to Doctor Hildebrand for description. He named it after me, Brevoortia gunteri. So far as the published record goes, this fish is distributed from Grand Isle, Louisiana to the Gulf of Campeche. The commercially important Atlantic menhaden is Brevoortia tyrannus, which extends from the St. Lucie Estuary of Florida north to New England, and during certain years it enters the Gulf of Maine.

Brevoortia tyrannus does not appear to spend the winter north of Chesapeake Bay, but the whole population undertakes a northward and a return migration during the spring and fall. The largest menhaden factories are in North Carolina, Virginia and New Jersey. The fish spawns in the summer and fall in northern waters, but in southern waters, from North Carolina southward, it spawns in the middle of the winter. Young fish and eggs have been taken in the New York area, but so far as we know, the eggs have not been taken in southern waters. There seems to be little doubt that the fish spawns offshore in waters of high salinity and that the young make their way inshore to waters which are virtually fresh, where they have been taken in large numbers in Virginia. As the small fish grow up they return to saltier water.

The Atlantic menhaden is prey of a great number of predaceous fish, especially the bluefish, and it is sometime chased ashore where it strands in windrows and causes difficulty for the local public health agencies. Such phenomena are unknown in the Gulf. A large number of copepod and some internal parasites have been described from the Atlantic and Gulf menhaden, but no epidemic mortalities have been noted.

The menhaden is a plankton feeder and Peck pointed out long ago that the organisms consumed are in the same general proportion as they are found in the plankton. In other words, the fish is an omnivorous feeder. Recent work on the Gulf menhaden in the Lake Pontchartrain region has borne out these findings.

The menhaden protein residue remaining after extraction of the oil was formerly used as fertilizer, but during World War II this commodity was so scarce that the protein by-product was no longer used for fertilizer and instead it was put into stock feed. The former use of menhaden has never been re-introduced and now the protein is used for stock feed. The oil has many uses. In fact, there are some two hundred various uses of menhaden oil, in paint, for instance, and even in lipstick. During the past few years menhaden oil has been exported to Holland, where it is made into oleomargarine. The people of Holland consume this product and export part of it and export a large amount of their own butter, somewhat in return.

There are two species of menhaden on the eastern coast of South America, Brevoortia agassizi and B. aurea. They are not commercially exploited so far as we know. There are no menhaden in the West Indies; so the distribution of the genus in the western Atlantic is somewhat discontinuous. Very recently de Buen has re-shuffled some of the sub-genera on the west coast of South America and placed two species there in the genus Brevoortia. There are also some more or less apocryphal accounts of a menhaden on the west Coast of Africa, which extend back for ninety years. Certain ichthyologists accept this information as factual and some others do not credit it.

(Gunter, #3)

The commercially valuable menhaden of the Gulf of Mexico is now known as Brevoortia patronus. It was previously listed as a subspecies of tyrannus. In 1948 Dr. S. F. Hildebrand showed that there were nine ways in which this species differed from the Atlantic tyrannus. The first larval menhaden ever caught was taken at Pensacola in 1864. Menhaden were recognized as being abundant along the Gulf by many workers before the days of the fishery. Eggs have not been reported in the literature. However, the writer and other workers have shown that the young migrate into low salinity waters and raise there. It has also been shown that spawning takes place in the early fall and on into the spring and that the greatest abundance of young is found in inshore waters in January. Apparently Brevoortia gunteri spawns somewhat later in the spring and ripe individuals have been taken by the author and by other workers in Texas during the months of March and April. No spawning or ripe patronus has ever been reported in the literature.

As a part of our investigation we decided to work out the distribution of the Gulf species. We have found with the help of the Fish and Wildlife Service workers in Pascagoula, who are studying trash fish, that B. gunteri extends eastward to Chandeleur Sound of Louisiana, which places it east of the Mississippi River. It seems to be most abundant in Texas waters and extends southward to Campache. The young enter fresh water and the older ones have been taken at salinities of sixty parts per thousand in the Laguna Madre. However, the greatest depth offshore at which this fish has been taken is eight fathoms. Similarly, we have found that B. smithi extends from the Caloosahatchee River of Florida to Chandeleur Sound. Since B. patronus is also found in large numbers in the Chandeleur region, this is the only place on earth where three species of menhaden can be taken together. The greatest known offshore depth where B. smithi has been taken is eight fathoms, and the young apparently enter fresh water.

Brevoortia patronus has been reported from the Tampa Bay area by Dr. Victor G. Springer and it also extends to the Rio Grande, where it was recorded by G. B. Goode in his original description. The greatest abundance of this fish is in the vast estuarine area off the coast of Louisiana. As I stated above, approximately ninety per cent of the catch comes from that area. The greatest depth offshore at which this fish has been taken is twenty fathoms at a distance of about twenty-five miles offshore. The fish do not seem to be abundant at these depths. We have been particularly interested in the mid-water trawl hauls carried on by exploratory vessels of the Fish and Wildlife Service from Pascagoula, but there have been no findings of large concentrations of menhaden.

Total length measurements of commercially caught fishes indicate that the bulk of the catch depends upon year classes one, two, and three.

At the Gulf Coast Research Laboratory we have also made a study of the other fishes taken in menhaden catches off the Louisiana coast, in Mississippi Sound, and a few off Alabama. It was found that the numbers of other fishes caught were extremely small, being less than three per cent. Occasionally, the fishing boats set by mistake upon large schools of mullet or upon the hairy-back, Dorosoma petenense. It is significant that the salinities where most of the menhaden catches are made are surprisingly low. The ranges according to our records are from 8 to 32 p.p.t. saline, with the bulk of the catch being taken at 25 p.p.t. and below. As stated above, small menhaden raise in low salinity waters, and there is no doubt that this fish, like the blue crab, the croaker, and the common shrimp, is strongly dependent upon the estuarine environment.

To summarize, we have submitted four papers as final reports to the Fish and Wildlife Service.

(Gunter, #4)

And now I shall talk very briefly about some matters which as yet have not been formally reported. The menhaden lacks a lateral line along the body. Yet it has a very extensive and complicated lateral line organ on the head. We have photographs of this organ and they may be examined here after we are through. A note on this subject will be submitted to an ichthyological journal in the near future.

One of the chief charges in our contract was to determine, if possible, whether or not different races of menhaden existed in the Gulf. Up to the present we have only attacked this problem through a study of the regular meristic characters. Two different types of collections made at different times have shown by statistical analysis that fish in Florida are somewhat different from those in Texas and somewhat more different from those in Louisiana. In brief, there seems to be a tri-partite racial distinction, at least, and the Louisiana race supports the greater part of the fishery. These results have not been written up in final form. Additionally, we have made collections of small menhaden from most of the bays extending from Florida to Texas, and these data are now being analyzed.

We have also made histological studies of the gonads extending from the very smallest fish obtainable to those which were almost completely ripe, and we hope to have a paper on this subject ready for publication within the next few months. Furthermore, we have studies of the distribution of the larvae by plankton tows and seine hauls in Mississippi Sound. This work has clearly verified the fact that the larva raise in low salinity waters. The very smallest ones are taken offshore in the open Gulf, and as the land is approached the sizes increase until the larva abandon their planktonic habit and live next to shore, where they are caught by seines. Incidentally, I should add that Mr. Fred June, of the Atlantic menhaden study group, has recently shown that small menhaden only develop properly in low salinity waters and become abnormal at high salinities. We have a great deal of information concerning the other fishes taken with small menhaden. Just what the value of these associations is is not yet clear, but we will probably submit some data on this subject. A final un-worked step concerns racial studies by means of paper chromatography or the more refined technique of electrophoresis. Whether or not we will get to this problem within money limits of the contract remains to be seen.

We are also much interested in the matter of prediction, and we have some ideas that possibly this can be done by studies of the abundance of the larvae. In 1956 when menhaden were extremely abundant in both the Atlantic and the Gulf and produced 2.1 billion pounds that year, Dr. George K. Reid found that the numbers of menhaden larvae in Texas bays were astounding. Three years later in 1959 the menhaden annual production again surpassed two billion pounds and, in fact, it was 2.2 billion pounds, the greatest of all time.

I do not know that there is any moral to be drawn from this report, but there are some hopeful things to consider. There is no indication that the menhaden population is failing and, in fact, it seems to be greater than ever. We must consider, however, that the Gulf menhaden is completely dependent upon the low salinity estuarine waters of the bays of the northern Gulf coast. The fact highlights again the importance of conserving the estuarine areas by all possible means, if this resource is to be preserved for the future

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GULF STATES MARINE FISHERIES COMMISSION
Mobile, Alabama
Hotel Admiral Semmes
March 16-17, 1960

"NEW DEVELOPMENTS IN INDUSTRIAL FISH UTILIZATION
IN THE NORTH CENTRAL GULF OF MEXICO"

Travis D. Love
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Bureau of Commercial Fisheries
Pascagoula, Mississippi

I Foreword

We have previously reported the growth of an industrial fish industry in the Northern Gulf area, based on the use of so-called "trash fish" species. In this Technological Lab, we define industrial fish as other than menhaden. These fish had always appeared in shrimp trawls in such numbers, as to be a nuisance and seriously interfere with trawling operations. Many unsuccessful attempts have been made to induce the shrimp trawlers to deliver these fish as a by-product to plants along the Gulf shores.

About seven years ago, the growing demand for protein for animal foods caused several firms to turn to utilization of this huge untapped source of high test protein and in so doing they gained additional nutritional values from the minerals, vitamins, and unknown growth factors which have been found in these fish.

Within these seven years we have seen the development of a new fishery that has grown from an almost non-existent state to a yearly production of millions of pounds, worth several millions of dollars to the fisherman. At the inception of this fishery, the industrial fish were caught incidental to the taking of food fish and shellfish; whereas now this fishery has grown into a full-time fleet containing some of the most modern vessels in the Gulf area. Many of these present-day trawlers are refrigerated, landing fish in prime condition for processing.

II Boats

The trawlers delivering this fish today are primarily fish trawlers, although they catch varying amounts of shrimp at the same time. Some of the trawlers are mechanically refrigerated, others carry ice, and a few during the summer months of nearby fishing, deliver unrefrigerated fish to the not too fastidious plants.

III Fish and Gear

The species involved are primarily croaker; spot; hard head cats; small flat fish; silver eels; anchovies; whiting, or as it is locally known, brown mullet; pinfish and silver perch. During the winter and early spring, while the trawlers are fishing farther out in the deeper Gulf waters, we find porgy; butterfish bumpers; and harvestfish appearing in the catch. Mixed in the average load are squid, shrimp, sting rays, crabs, jellyfish, sea weed and sea robbins. These items are picked off on an inspection belt, prior to the grinding operation.

(Love, #2)

Huge schools of thread herring appear off the West coast of Florida, and move on up into the Northern Gulf area during the summer and fall. Successful attempts have been made to catch these surface schools of fish with purse seines. Loads of 70-75 tons have been delivered to local plants by large mechanically refrigerated boats. During part of the year, these fish have an oil content of 13-20% and thus are more valuable for blending in with less oily fish for catfood or for processing as meal and oil. A Gulf menhaden plant reportedly processed 1000 tons as oil and meal this past summer.

IV Processing

Several methods of utilization of these industrial species have been developed. They are used as catfood, as fish meal, in broiler and swine feed, as semi-liquid or dehydrated fish solubles, produced through enzymatically digesting the fish and more lately to blend in with crab and shrimp meal, to raise the nutritive value of those meals.

A. We have five large catfood plants in this vicinity using 70% raw, fresh, whole fish in their product. These plants operate on a regular scheduled basis, producing thousands of cases daily of high quality canned catfood under nationally known brands.

These firms maintain a very close watch on their formula and are unusually sensitive about their quality control for an animal food. Pet owners appear quite concerned about such things as texture, color, odor, and even label design of their favorite's food. It is worthy to note that 26 million cats are fed at least 365 meals per year, and the resultant dollars spent per year are astronomical. Pet Food Magazine reports that 254 million pounds of fish were used in catfood as far back as 1958. This would equal nearly 7 million dollars as local rates. There has been a terrific expansion since 1958, mostly in Gulf coast plants.

B. Another use for industrial fish is as fresh-frozen-whole fish for mink feed. Due to scarcity of competitive fish in the Great Lake area during the winter and early spring months, local prices justify shipping this product to the Wisconsin mink farmers. The fish are frozen in 50 lb. blocks and shipped to brokers and ranchers' co-ops in the northern area for freezer storage and subsequent delivery to the mink ranchers. The Bureau of Commercial Fisheries Technological Laboratories were able to be of service to this industry in the following manner. A few salt water and several of the rough fresh water fish naturally contain an enzyme known as thiaminase. *This produces temporary sterility, loss of luster and sheen on the mink fur, and a general debility of the animal. Some of our Technological labs had made analyses and accumulated data, showing the amounts of thiaminase found in the more common species. By introduction of a sorting line, prior to freezing, the plant was able to lower the percent of thiaminase positive fish to the required 5% level for safety in feeding mink. This is not a problem in canned animal foods, as thiaminase is thermolabile and the heat of processing inactivates it.

C. Addition⁹¹/use of these fish, more recently, has been in a product known as liquid fish or fish solubles. The raw material is ground and held in tanks at 130-140° F. for a few hours while the natural gut enzyme digests the flesh

* * * * *

* Note - The following sentence should be inserted. This enzyme inhibits absorption of, or in some way, prevents the body from utilization of the essential vitamin thiamin.

(Love, #3)

into a thick soupy liquid. This soluble, after evaporation to contain only 50% water, may be shipped away to feed mills for mixing with dry ingredients as feed for broilers or swine. Lately, two plants in the Pascagoula area are drying this soluble and mixing it at the plant, thus producing a specially prepared food, one primarily intended for mink feed, the other as broiler rations.

D. The simplest process, of course, is in the production of fish meal, whereby the fish are chopped into smaller pieces, dried in a revolving drum dryer, ground into meal, and either bagged or sold in bulk for various animal feeds. Due to a price break in fish meal, there has been some slackening of interest in this field. A few of the larger shrimp and crab plants, having drum dryers already in operation to reduce their shells, are still buying fish for meal alone. One new plant in Louisiana has recently been put in operation to produce fish meal only. A few menhaden plants accept loads of trash fish for reduction; one in particular processed the thread herring as meal and oil. We have news of two plants in the Florida area being constructed now, intended for the production of straight fish meal.

E. Various pilot plants and experimental operations are also being tested all along the coast toward further utilization of the industrial specie. One experimenter is trying to place a small tank for enzymatic production of soluble aboard each shrimp trawler. The idea being that trash fish picked out of shrimp catches would be dumped into the tank and held as solubles until reaching port.

F. Another operator has developed a fish bait business using the smaller herring and anchovies, frozen in small packages. This appears to have tremendous possibilities, especially in tourist areas such as Florida.

G. Considerable thought and some pilot plant operations have been done in utilizing the smaller industrial fish of the herring group as the basis for a sardine industry. This, of course, would remove it from the classification of industrial fish. However, the only present use of thread herring, anchovies, round herring, sardinella, and other sardine-like fishes is as industrial, or non-food fish.

H. Fish flour is, of course the ultimate use for industrial fish since this would enable us to use the protein for human consumption. Several methods have been developed for the extraction of a white, dry, odorless, almost tasteless fish flour from whole raw fish. The equipment is costly and the price per pound appears quite high at present, compared to some of our cheaper proteins, for human consumption, such as soy or cottonseed flours. However, it is reported that fish flour is being added to all bread sold in the poorer areas of the Republic of South Africa. In this country, our Food and Drug has voiced objections to the use of fish flour for human consumption, since it is manufactured from whole fish and thus must include some extracts of the gut and viscera.

V. Research and Development

The Pascagoula Technological Laboratory began research on these fish almost concurrent with its dedication just 22 months ago. We have planned a project whereby we obtain samples on a scheduled basis directly from trawlers as they deliver fish to the plant's unloading dock. Our chemists do composition analyses several times each year on ~~each~~ specie, to determine oil, protein, moisture and

(Love, #4)

ash content. At the time of sampling, data is obtained as to geographic origin and the date of catch.

Analytical results as to protein oil, moisture, and ash are reported on a quarterly basis for each individual species. The chemists have already published several of these data sheets, and copies are available here.

In the first publication a description of the analytical method was included along with a discussion of the sampling statistics used.

EXPERIMENTAL

Samples of 17 of the more common industrial fish have been collected on a monthly basis from a geographical area roughly bounded by Perdido Bay, Florida, on the east and Ship Shoals (off the Louisiana coast) on the west. Within this area there seems to be little difference in the proximate analysis of any one species at any one time. Collections were kept within this area so that the data would show fluctuations in terms of seasonal and biological changes. Changes which were geographical or meteorological in origin would then become apparent as the collection area shifted.

A simple listing of the various species on which this work is being done must suffice as there is not time to discuss the variations of them all. In alphabetical order the species for which this data will be available are as follows: Anchovies, bumper, butterfish, croaker, banded croaker, hardheads (cats), harvest fish, menhaden, pigfish, porgies, razor belly herring, silver eels (cutlass fish), silver perch, spot, star drum, thread fin, thread herring, and white trout. For purposes of this discussion we will use what is perhaps the most common species at all times of the year, the croaker. The croaker constitutes roughly 50% of the industrial fish landings throughout the year, and is a very important member of this group of fish. The other species seldom exceed an individual percentage throughout the year of over 10%, although on occasion a monthly average of an individual species other than croaker has risen as high as 30%. In this series of experiments the fish were measured, weighed and then ground whole, so that the data might be compared to actual use conditions.

DISCUSSION

I have here two graphs showing (1) the oil content of the croaker from January through December and (2) the moisture content of the same species for the same period. It becomes quite evident that there are a number of points in this curve which are of interest. The solid line in both charts represents the average value for each component, while the dotted lines represent the upper and lower limits of the range of these components.

One of the main points of interest can be seen immediately at A. During the first week of June it can be seen that the oil content rises to an average of 8.6%, while at the same time the average moisture content dropped to 69.9%. According to Hildebrand and Schroeder (1927) the spawning period of the croaker extends from August to December and possibly later in Southern waters. Thus we see that, if this information applies to croakers in this area, immediately

(Love, #5)

prior to spawning there is a large increase in oil content and a compensatory decrease in moisture content. As can be noted from the range curves, some of the samples showed a much greater increase in oil content than the others. Presumably this is due to the female of the species preparing for the ripening of the roe.

The slope of the curve from February to June is much gentler than the slope immediately following the peak in June. This is as would be expected if there was a gradual preparation by the species prior to the spawning period, with the build-up of oil and the corresponding decrease in moisture being connected with the readying of the species for reproduction. The significance of the parallel increase in oil and decrease in moisture lies in the fact that living organisms tend to keep the ratio of liquid material to solid material (e.g. ash and protein) almost constant. Therefore, when the oil content of the fish starts its gentle rise there must be a corresponding drop in moisture in order to keep the liquid/solid balance.

Chart #2 shows the values of ash and protein throughout this same period. It is evident that there is little change in these values. The changes that do occur in the ash content are apparently related only to a change in relative size of the fish. On inspection of the average weight and length of the croakers caught throughout the year it appears, as one would suspect, that as the body frame size remains relatively constant with most of the total weight of the fish being attributed to the flesh (which yields a negligible amount of ash), the percent of the total fish which is ash can be changed by the fish merely adding more flesh. Therefore, this change in ash content apparently has no significance other than growth in terms of weight.

little

The protein content also shows relatively little change. The changes shown probably also reflect the change in relative proportion of body frame and flesh. The general gradual rise in protein content during July, August and September might be attributed to the amount of protein contributed to the whole by the roe which the female is carrying at this time.

I have taken the croaker merely as an example, the same general type of graph is obtained when the protein, oil, ash, and moisture contents of each of the other species mentioned previously are plotted in relation to time. To date, it has been found that the peak oil content of the different species fall into three separate classifications - Spring, Summer, and Fall. Half of the species listed (9) have the largest oil value in the summer, while the remainder are divided equally between spring and fall.

SIGNIFICANCE

You may wonder just what is the significance of all this data. It has been shown statistically by the Division of Biology Research that it is possible to estimate the percentage composition of an entire boat-load of fish arriving at the dock by determining the species composition of three twenty pound samples taken from the top, the middle, and the bottom of the vessel as it is being unloaded. Once armed with the percentage of each of the more common species of fish, it is possible to calculate, by the use of simple proportions, the percent of moisture, protein, oil, and ash to be expected in the entire load. This is of great value to the industry, particularly in terms of the percentage of oil to be expected during different months of the year.

(Love, #6)

There are other more fundamental questions of a biological nature which may also be answered by this type of research. We intended to extend the geographical area to be sampled from the original base area to encompass the coast line from Cape Hatteras, N. Carolina, to Texas on several of the more common species. There is the possibility that the general curve obtained for a species from the different geographical regions will not be altered to a great extent - that it will merely move from left to right along the X or time axis. This would mean that the regular cycle of oil increases and decreases (and presumably spawning periods, as they seem to be connected) is more or less dependent on factors connected with geographical distribution. These factors would be in the nature of physical ones - such as period of light, or temperature of environment, rather than availability of food, types of food, etc.

By attacking various parts of the typical curve for each species such as point A and the slopes to the left and right of point A with a view to pin-pointing the changes which occur here and the reasons for these changes, it may be possible to shed light on parts of the reproductive cycle of these fish which will be of value to the biologist.

Heretofore, a great deal of the work that has been done in the field of proximate analysis was concerned with food fish and little attempt has been made to correlate the protein, oil, ash and moisture content of each species with season, geographical location, repetition of data from year to year, etc. Data obtained in our studies should show the extent of correlation of each species with respect to these questions.

This long range study should then be of value in two ways: (1) it provides the industry with data which they need to operate efficiently and effectively and, (2) it may provide the answers to biological questions which are currently unanswered.

In the future, we expect to broaden the scope of these analyses and to include other marine products, especially these for human foods.

In closing, I would like to use an illustration of the nation-wide possibilities of industrial fish from the Gulf and South Atlantic area.

Some years ago, the USDA Animal Disease Eradication Division at Sebring, Florida, began an experiment to wipe out screw worm infestation in cattle. This involved the use of horse meat to raise millions of male screw worm flies. As horse meat became scarce, whale meat was substituted. As whale meat became scarce, the researchers began looking around for other meat. Someone mentioned raw, fresh fish. We have been in touch with these people and are furnishing samples of these industrial fish for their research. If these tests are satisfactory, this industry will be able to sell thousands of pounds of fresh-frozen industrial fish monthly as the research grows larger. If the screw worm eradication work is extended to Texas and the Southwest, huge amounts of fish will be used.

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GULF STATES MARINE FISHERIES COMMISSION
Mobile, Alabama
Hotel Admiral Semmes
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"THE DIVERSIFICATION POTENTIAL OF THE GULF SHRIMP FLEET"

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and Gear Research
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The question of multi-purpose fishing for Gulf of Mexico shrimp trawlers is coming up more frequently every month. Of course the questions are closely concerned with the obvious problems facing the shrimp industry today. However the question is exceedingly complex and there appears to be no easy answer. There is an initial reluctance on the part of shrimp fishermen to leave the shrimp fishery and this is quite understandable when we consider that we are not as yet in a position to make a series of recommendations that can be backed up by all of the facts that are necessary to completely assure most of the operators of a good chance of success by diversifying their fishing efforts.

The question is not as simple as just having fishable stocks within reach. For diversification ventures to succeed, a good deal depends upon the experience and calibre of personnel involved, condition of vessels, required operating capital and market conditions. We feel that there are a large number of fisheries which could be pursued on an off-season basis which would increase the total earnings of a given vessel. However, each case at this time seems to deserve special consideration.

I would like to very briefly outline some of the fisheries that would seem to offer satisfactory earning potential if pursued on a seasonal basis.

The first of these concerns the industrial fish fishery which has moved ahead quite rapidly in recent years. It has been well demonstrated that Gulf shrimpers have high adaptability for trawling scrap fish especially in that a fleet of some 30-40 vessels has been profitably employed in the Mississippi Coast area thusly. It has been commercially demonstrated that purse seining can also be conducted from these trawlers. So far our experiments have indicated a good potential for winter scrap fishing with mid-water trawling. We have not as yet reached the point where we can make firm recommendations on gear. Our experimental work along these lines is continuing. Other possibilities include lampara net fishing and night light trap fishing. However, a very small amount of work has been done with these techniques to date.

The exploratory information now on hand indicates a large, untapped stock of pelagic school fishes, all of which would have industrial fish potential, and many of which may provide a supply of food fishes such as sardines and anchovies.

So far the industrial fish fishery has been confined to shallow water and even within this restricted area the apparent maximum catch has not been reached.

(Bullis, #2)

Exploratory information indicates a large potential in the 20 to 100 fathom range. We know very little about the deeper water.

The cost of conversion to fish trawling is not great and this has made industrial fishing an attractive alternate. It must be recognized that the extent to which this fishery develops is hinged to some extent on the future of the fishmeal market which is at present in a critical condition. The additional expansion that is possible in the petfood industry as well as using these fish for mink food and such specified projects as screwworm culture do not indicate unlimited expansion. Perhaps the most encouraging prospect is the potential for developing the sardine fishery which would place the value of catches sufficiently high to encourage the switch.

We still know very little of the clam and scallop potential in the Gulf area but the little information on hand is fairly encouraging. Most shrimp trawlers of all sizes would make excellent scallop dredge boats. Only the smaller shallow draft trawlers could be used successfully as clam dredgers. The cost of conversion is relatively low except for such specialized applications as the use of hydraulic jet clam dredges. During the course of explorations, several large scallop beds have been delineated and have been successfully test fished. It has been found that scallops have a quality factor which varies seasonally and such a fishery could not be pursued on a year-round basis. Only the sketchiest information is available on potential clam beds. Preliminary dredging surveys off western Florida indicate possible reconstitution of the now abandoned clam beds in the Marco Island - Everglade City area. There is also some possibility of new grounds being situated as far north as Cedar Keys.

Shrimp vessels are not ideally suited to tuna longlining, however the few modern shrimpers that have tried tuna longlining in the summer months have shown very high catch rates and there is a good likelihood that efforts will be increased to establish a small longlining fishery in the Gulf area. There is now a ready market for local tuna production in Mississippi and this canning plant could easily handle the production of several boats.

Many shrimp fishermen have tried snapper fishing and now conduct handlining in the northern Gulf area during periods of very poor shrimp production. This could be expanded somewhat at virtually no converting cost. The largest shrimp trawlers are suitable for adaption to snapper trawling and it is probable that this will be tested several times in the coming year. Some recent commercial developments also indicate a possibility of trap fishing for snapper from shrimp trawlers.

Another possibility for seasonal diversification is shark fishing. Most trawlers have fair to good adaptability and the fishable stocks of commercially valuable sharks has good seasonal prospects. Estimates based on catch rates previously achieved during the days of commercial shark fishing (prior to 1950) permit us to assemble figures that would show a catch valued in excess of \$200.00 per day fished. The conversion and gear costs would perhaps be somewhat restrictive but could be accomplished for under \$2,000.00. Shark fishing is a messy job and lacks popular appeal in spite of any financial incentives.

(Bullis, #3)

It could also be pointed out there appear to be Spanish mackerel and King mackerel stocks available off Mississippi and Louisiana that are receiving no commercial exploitation at this time. Trolling, gill nets, trammel nets; lampara nets, purse seines, etc. might well yield profitable catches, however this has not been demonstrated to date.

Very few shrimp fishermen will willingly leave the shrimp fishery and perhaps some of the most helpful research can be conducted is along the lines of opening shrimping areas now inaccessible to them. You know, for example, that there are extensive areas containing shrimp on the Texas and Florida coasts that are prohibitive to trawling due to bad bottoms. Gear research on these grounds might be very rewarding. Also, deep water shrimping in the three areas previously delineated by the Bureau of Commercial Fisheries holds good prospects. Some vessels are now equipped for trawling down to depths of 250 fathoms. A few shrimpers have tried out these grounds and the experimental catches have been high. The two important problems facing the development of a deep water shrimp fishery are greater vulnerability to bad weather and the problem of reconstituting the "specialty" market to handle Royal Red shrimp.

One of the most interesting prospects is the movement of segments of the Gulf shrimp fleet to new areas. We know that there are several large shrimp fishing areas in the Caribbean Sea. However, pursuit of shrimp on these grounds has attending political problems. This type of problem is greatly diminished off the northeast coast of South America where a moderate sized fleet of U. S. vessels is now operating. The potential of the area as it now appears is most encouraging and the transfer of additional U. S. trawlers to the area would very likely have a very beneficial effect.

To summarize my personal feelings on this matter I would say that the industry (i.e. the number of vessels) can stay large by expanding operational horizons or can grow smaller until it reaches the point where the catch per unit of effort on U. S. grounds is sufficiently high to provide a predictable profitable return.

* * * * *

"SHRIMP SELLING CUSTOMS"

John C. Ferguson
St. George Packing Company
Fort Myers Beach, Florida

In the twenties almost all the shrimp produced in Fernandina, Florida, with the exception of those sold locally, was shipped to Fulton Market, New York, on consignment and this continued for many years.

In 1931 when a few Florida (east coast) producers moved to Texas and operated out of Galveston and Texas City, owing to the greater distance to and the inability of New York to handle all the shrimp produced, markets were cultivated in the middle west and west. In Galveston at that time dealers buying shrimp to freeze for export to Japan would only buy daily caught shrimp.

(Ferguson, #2)

In the winter of 1931 most of the boats were back in Florida and had a hard time during ^{the} depression. The price dropped to as low as six cents per pound headed for large shrimp and when anyone got as high as ten cents per pound he hit the jackpot.

The next exodus of shrimp boats from the east coast of Florida occurred in 1937 but this time to Morgan City, Louisiana, where shrimp in large quantities had been discovered between Ship Shoal and Trinity Shoal the previous year. By that time the techniques of freezing and packaging shrimp had improved considerably and a goodly portion of the catch at Morgan City was frozen before being distributed.

Just before World War II a Mr. Mullis working in cooperation with Henry Ambos of Trade Winds, Thunderbolt, Georgia, developed a frozen peeled, deveined and breaded package of shrimp which was ready to fry. This package found ready acceptance by the housewife and resulted in nation wide distribution of shrimp. In the past several years it has been practically impossible to find a small town in the United States which does not carry frozen shrimp.

* * * * *

"SHRIMP PRODUCTION PROBLEMS"

Joseph S. Ramos
Ramos Shrimp Company
Bayou La Batre, Alabama

Secretary's Note: A summary of the above presentation will be prepared and forwarded for insertion into these Minutes at a later date.

(COPY)

GULF STATES MARINE FISHERIES COMMISSION
Mobile, Alabama
Hotel Admiral Semmes
March 16-17, 1960

"PROGRESS IN FEDERAL SHRIMP RESEARCH DURING 1959"

Dr. George A. Rounsefell
Director, Biological Laboratory
Bureau of Commercial Fisheries
Galveston, Texas

Since last year's meeting we have made additional progress toward implementing the "Program for Biological Research on Shrimp in the Gulf of Mexico", first formulated by your Commission in 1954. A revised program was indorsed by your Commission at your 1959 annual meeting. We know that the several states have made valuable contributions toward this work, but I can speak only of what has been done by the federal biologists.

Funds requested by your Commission for a sea-water system at our Galveston Laboratory have been made available. Bids for construction of the first unit will be ready for distribution soon. It consists of complete remodeling of one building to provide for a recirculating system with large underground storage tanks and many aquaria. It will be used chiefly for holding fish and shrimp for testing the toxicity of insecticides and for studies of shrimp physiology.

The second unit located on East Lagoon in Galveston is presently being designed by the Corps of Engineers. It is on a tract of 140 acres surrounding a brackish lagoon. With a continuous flow of raw sea water it will be valuable in studying larval development, behavior of larval and adult shrimp, and obtaining basic data needed to determine the feasibility of shrimp farming.

Continuation of the study of migrations by staining was continued this year. Marking at the western end of Barnes Sound showed that these shrimp moved northward toward Biscayne Bay, not contributing to the Tortugas fishery. However, a recent staining (less than 2 months ago) at Shark River near the northern edge of Everglades National Park has already yielded (up to March 8) 30 stained shrimp recaptured by commercial vessels on the Tortugas grounds. We plan to stain juvenile shrimp soon near Sanibel Island to determine the northern boundaries of the nursery areas that feed the Tortugas fishery.

During May we stained and released 24,000 brown shrimp in Clear Lake, a tributary of Galveston Bay. Recoveries of over 300 shrimp showed rather conclusively that brown shrimp start moving out of the shallow nursery areas at a rather small size and rapidly traverse the bays to the open Gulf. A few recoveries from the open Gulf indicate a southward movement in early summer.

By the end of March we will have completed a full year of intensive sampling of larval and post-larval shrimp moving from the spawning grounds through the passes into Galveston Bay. We have succeeded in rearing larvae of several species of shrimp from known parentage and are working on the identification of these larvae, so we can determine the seasons of migration and abundance of the larvae of the different species.

(Rounsefell, #2)

The University of Miami Marine Laboratory under contract with the Bureau has described the larvae of the pink shrimp and is making hydrographic observations in Florida Bay to determine the factors governing their movement from the Tortugas spawning grounds to the shallow nursery areas.

Since last year we obtained enough funds to start a small-scale study of the effect of insecticides on shrimp and estuarine fishes. At present we are working on the chlorinated hydrocarbons which are the most widely used chemicals.

In the physiological studies we are developing an artificial sea water for holding shrimp, and are now commencing the feeding of artificial diets to attempt to discover their basic nutritional requirements.

To date we have examined the stomachs of 2,500 young of several species of fish occurring on the shrimp nursery areas. For the 8 months of the year so far completed, we were surprised to find that less than 4 percent of these young fish had eaten shrimp.

Some preliminary experiments in holding pink shrimp in a salt-water pond showed an increase in size from 250 (tail weight) count per pound to 65 count per pound in a period of $15\frac{1}{2}$ weeks from February 8 to May 7. A group released into the pond in April grew even faster owing to the higher water temperatures.

A study was commenced last year to utilize the excellent shrimp statistics collected since January 1956 by the Statistical Branch of the Bureau under Mr. Charles Lyles, to determine abundance trends. Because of the divergence in vessel size and the different habitats of the several species of shrimp; it has been necessary to do a great deal of work on vessel fishing ability prior to reaching any conclusions. So far, there does not appear to be any downward trend in shrimp abundance during these four years, but results to date are only tentative.

M I N U T E S

Executive Session, Mobile, Alabama, March 17, 1960

The Commissioners, proxies W. J. Cutbirth, Jr., Howard T. Lee and James N. McConnell; George W. Allen, Charles W. Bevis, I. B. Byrd, John C. Ferguson, Theodore B. Ford, Raymond E. Johnson, Thomas A. Johnston, Charles H. Lyles, G. Robert Lunz, Harry I. McGinnis, George A. Rounsefell, Joseph S. Ramos, Ted A. Shepard, Spencer H. Smith and Bert E. Thomas, met for breakfast in the Wallace S. Pitts Room at 8:30 AM.

Following breakfast, Chairman Gautier introduced Ted A. Shepard who advised the group as to the progress of the proposed Federal shrimp legislation.

Charles H. Lyles was asked some questions regarding the statistical program and George A. Rounsefell answered some questions relative to the shrimp research program. It was stated that the Bureau of Commercial Fisheries will have available about \$45,000 more this year than last year for Gulf shrimp research; total to be available being approximately \$253,000. It was brought out that certain improvements could be made in the statistical program if additional funds could be made available. The mentioned \$45,000 will be used to conduct a basic ecological survey.

J. Lloyd Abbot of Mobile was recognized. He spoke briefly on the use of insecticides in connection with the Federal fire ant program. Below is a copy of the resolution which Mr. Abbot requested the Commission to consider. (Note: the resolution was not acted upon).

"1. Whereas, the Congressional Committees were given a non-factual presentation which represented the imported fire ant to be a threat to agricultural and livestock production at the Committee Public Hearings in 1957, which non-factual presentation caused the Committee to set up an eradication program based on this insect, and

"2. Whereas, this non-factual presentation is available for anyone to read in the permanent and published reports of these Committee Public Hearings, and

"3. Whereas, the gentlemen who participated in making this non-factual presentation may have been led to actually believe the non-factual statements they made at these Public Hearings in 1957, and

"4. Whereas, any Member of these Congressional Committees who heard this non-factual presentation, and was not informed to the contrary, would naturally have voted for an eradication program based on the imported fire ant, and

"5. Whereas, a similar non-factual presentation was made to the Committees of the Alabama Legislature in 1957, resulting in the Alabama Legislature appropriating funds in 1957 for an eradication program based on the imported fire ant, and

"6. Whereas, at the Public Hearing held by the Ways and Means Committee of the Alabama House of Representatives on 7 October 1957, this Committee found out the true facts from Auburn University Research Findings concerning the imported fire ant, and learned that the imported fire ant is not only not a threat to agricultural or livestock production, but it is not even listed in the published list of the 20 insects in Alabama of most economic importance, and

"7. Whereas, these Auburn University Research Findings were of course supported by the unanimous opinion of the 52 experts (including a U.S. Department of Agriculture contingent of five) who attended the fire ant research meeting in Auburn, Alabama, in September 1958, and

"8. Whereas, the Reader's Digest on page 67 of its June 1959 issue reported this fact that not one of the 52 experts, when challenged to do so, would dare go on record as saying that the fire ant eradication program could be justified by damages to crops or animals, and therefore the whole world now knows that there is no justification for the imported fire ant "eradication" program, and

"9. Whereas, the Alabama Ways and Means Committee, acting upon these recognized and incontrovertible facts, immediately killed the unjustified Alabama appropriation for \$500,000.00 for continuing the proven completely unjustified "eradication" program based on the imported fire ant - and Alabama has approximately 50% of the infested acreage of imported fire ants in the entire United States, and

"10. Whereas, a number of men of integrity were misled into making non-factual statements which convinced the 1957 Congress and Legislatures that the imported fire ant is a threat to agricultural and livestock production, and

"11. Whereas, such men, when they find out the facts, if they are men of sufficient size - really big men - they are correcting their previous non-factual statements, and we consider Mr. C. M. Stanley, the distinguished and long time Editor in Chief of the Alabama Journal, Montgomery, Alabama (who is known over the whole newspaper world as a man of the highest integrity) to be an outstanding example or illustration of this fact or happening, and

"12. Whereas, for industry, business, agriculture, and the public to continue to be inflicted with all the terrific costs, hardships, and inconveniences of an unjustified control or "eradication" program, and its resultant unjustified and cruel quarantine - all now revealed by research findings to be unjustified, and recognized by the authorities to be unjustified - is outrageous, and

"13. Whereas, the federal and state control organizations are reported to be now planning to arrange some means of carrying on this completely unjustified program with federal funds alone, in those states where there is no state appropriation, and

"14. Whereas, for the federal or state governments to put out by any means a deadly poison insecticide which either immediately, or by the slow accumulation of the poison, is a threat to human health or life, or to the health or life of livestock or domestic animals (and in turn to the people who may eat the meat or drink the milk), or to the health or life of beneficial soil organisms, in connection with an unjustified control or eradication program, or to furnish

the poison insecticide in connection with such a control or eradication program, is not only completely unjustified, but is outrageous, and deplorable, and

"15. Whereas, for the federal or state governments to put out by any means a deadly poison insecticide which either immediately, or by slow accumulation of the poison, kills wildlife in connection with an unjustified control or eradication program, or to furnish the poison insecticide in connection with such a control or eradication program, is not only unjustified, but is also outrageous and deplorable, and

"16. Whereas, Auburn University Research Findings have shown conclusively the slaughter of wildlife by this unjustified "eradication" program, and has stated that it logically follows that if the eradication program is carried out over wide areas, as would be necessary for eradication, that the result would be a wildlife disaster of the first order, and

"17. Whereas, Mr. Donald L. McKernan, Director of the U. S. Bureau of Commercial Fisheries has testified that both shrimp and crab were highly susceptible to the poison used in this unjustified program, and where the poisons have drained into the estuaries and backwaters of the Gulf area, shrimps and crabs were affected, and that crabs have been "virtually eliminated" in some areas by insecticides.

"Therefore be it resolved by the Gulf States Marine Fisheries Commission at its meeting in Mobile, Alabama on 17 March 1960, that we request Senator Richard B. Russell, Chairman of the Agricultural Subcommittee of the Committee on Appropriations of the Senate, and the Honorable Jamie L. Whitten, Chairman of the Agricultural Subcommittee of the Committee on Appropriations of the House, to call Public Hearings on the federal appropriation bill which proposes to furnish funds for a continuation of the eradication program based on the imported fire ant, in order that these Committees may have an opportunity to obtain the true facts concerning the imported fire ant, and we request that this organization and all other persons concerned be given ample notice of these Hearings."

Guests were excused at this point to attend the Scientific Session.

Ted B. Ford, Chairman, Estuarine Technical Coordinating Committee, presented a revision of the Commission's original ETCC resolution (April 11, 1958), as was requested by the Commission at the Corpus Christi, Texas meeting of October 15-16, 1959. Following discussion, Mr. McConnell moved for adoption of the resolution. The motion was seconded by Mr. Lee, duly passed and is here-
with first attached.

Commissioner Rappalet moved for acceptance of the Minutes of the October 15-16, 1959 meeting. Commissioner Easterly seconded. The motion was duly passed.

The Mississippi Delegation announced its decision to have the March 16-17, 1961 Commission meeting at Biloxi. The Buena Vista Hotel was mentioned as a possible headquarters.

Coming under the heading of old business, the resolution which was offered at the New Orleans, March 19-20 meeting, and which requested legislative consent of each member state to authorize its marine fisheries agency to prohibit the landing of shrimp during certain seasons of each year, not to exceed

45 days, was discussed. The consensus was that no solution which would be fair and satisfactory could be worked out in this connection. Commissioner Mitts moved that the resolution be tabled and that the committee appointed to study the matter be discharged. Commissioner Caffey seconded the motion. On vote the motion duly passed. An exhibit showing the variations in maximum weight requirements for shrimp, and closed seasons in the Gulf States was prepared and distributed by the Secretary for possible use in the above connection.

The Abbot insecticides resolution, which is incorporated in these minutes was discussed. Chairman Gautier expressed the opinion that the Commission would be beyond its authority in requesting the Congress to conduct Hearings. However, he said that the possibility of insecticides harming the fisheries should be given consideration. No action was taken on the resolution. Commissioner Rappolet moved that the Estuarine Technical Coordinating Committee be requested to give the matter consideration and render a report at the October 20-21, 1960 Commission meeting. Commissioner Delacruz seconded. On vote the motion duly passed.

The subject of Commission finances, the Secretary reported that every effort was being made to conduct operations within the budget but that it was apparent that certain items of expense would exceed the forecast. He said he expected the Commission to have in the neighborhood of \$800 cash on hand as of June 30, to start the new year. Speaking of increased state membership dues, Commissioner Caffey said that the last session of the Alabama Legislature failed to bring the bill up for action. Chairman Gautier said that Commissioner Morse would put a bill before the current session of the Mississippi Legislature to increase that state's membership dues to \$3,500.

Commissioner Younger inquired as to the current price per cubic yard for mudshell in the several states and was given that information. These prices by states were given for new leases:

Alabama	10¢
Florida	15¢
Louisiana	12¢ *
Mississippi	10¢ (In 9 months will go to 15¢)
Texas	8 & 10 **

* Louisiana - Severance tax of 3¢ per cubic yard or 4¢ per ton, additional, goes to the Louisiana State Department of Revenue.

**Texas - 8¢ for 3/8 inch shell and smaller, loaded separately.
10¢ for a larger than 3/8 inch shell.

With no further business to be presented, Chairman Gautier adjourned the session at 11:45 AM and requested the Commissioners to assemble in Ball Room A for the final General Session.

Prepared by: W. Dudley Gunn
Secretary-Treasurer

RESOLUTION

WHEREAS, the number and magnitude of man-made changes in the estuaries, sloughs, marshes, lagoons and swamps that fringe our Gulf Coast have been increasing steadily to meet the needs of our growing population and our expanding industry; and

WHEREAS, these changing areas provide an essential and unique habitat for important game, sport and commercial fishes, shellfish, and wild furbearers; and

WHEREAS, there is definite need for a research program to provide a store of basic knowledge concerning the reaction of fin fishes, shellfish, migratory waterfowl, and marsh dwelling game and furbearers to changes in salinity, temperature, sedimentation, pollution, depth, currents and other environmental factors; therefore

BE IT RESOLVED that a new approach be taken to formulate, conduct and provide an intensive fundamental research program aimed at determining the complex biotic changes that accompany physical modification of the estuarine environment; and

BE IT FURTHER RESOLVED that such a program be undertaken separate and independent of any planned or heretofore approved development project and be coordinated as a cooperative effort between Federal and State agencies; and

BE IT FURTHER RESOLVED that a detailed program of estuarine research for the entire Gulf States Area be planned, including outline of projects, general procedures and cost estimates, for submission to the Gulf States Marine Fisheries Commission for approval and implementation; and

BE IT FURTHER RESOLVED that in order to prepare the above described plan and to insure coordination of technical effort, should the plan be approved and implemented, there be established an Estuarine Technical Coordinating Committee composed of two officials of each of the Gulf States to be appointed by the

executive director of the respective conservation agencies and two officials of each of the Bureaus of the Fish and Wildlife Service to be appointed by the chief of each Bureau; and

BE IT FURTHER RESOLVED that this committee be responsible to the Gulf States Marine Fisheries Commission for planning and reviewing the program from year to year, for maintaining free exchange of data, fostering the publication and dissemination of the results of its findings, and for making recommendations to each of the said Bureaus of the Fish and Wildlife Service and to the conservation agency of the respective and affected State concerning technical and project procedures as may be deemed necessary and expedient for a coordinated and sound program; and

BE IT FURTHER RESOLVED that in the event any State wishes to carry out its estuarine projects separately and distinctly from this program, then that (or those) state(s) will not be required to submit its program to the Estuarine Technical Coordinating Committee, but the state is encouraged to exchange any information or results with the Committee.

* * * * *

The foregoing resolution was unanimously adopted by the Gulf States Marine Fisheries Commission at a regular meeting held March 16-17, 1960 at the Admiral Semmes Hotel in the City of Mobile, Alabama, and cancels a somewhat similiar resolution which was adopted by the Commission at a regular meeting held April 10-11, 1958 at the Fort Harrison Hotel in the City of Clearwater, Florida.



W. D. Gunn, Secretary-Treasurer
Gulf States Marine Fisheries Commission