PROGRAM

(Commission Chairman L. D. Young, Jr., Presiding)

9:00 AM

REGISTRATION

9:30 AM

CALL TO ORDER

INVOCATION
Reverend Charles Aucoin, Pastor
St. Margaret's Catholic Church
Bayou La Batre, Alabama

ROLL CALL

WELCOME ADDRESS
The Honorable John Patterson
Governor of Alabama
Introduced by:
Commission Vice-Chairman Will G. Caffey, Jr.
Senator, State of Alabama

ADDRESS
Donald L. McKernan
Director, U. S. Bureau of Commercial Fisheries
Introduced by:
James McPhillips
Member, American Fisheries Advisory Committee

ADDRESS
Wesley E. Gilbertson
Chief, Division of Environmental Engineering and Food Protection
U. S. Public Health Service
Introduced by:
Commissioner William C. Younger
Director, Alabama Department of Conservation

ANNUAL REPORT
Commission Chairman L. D. Young, Jr.
Director, Louisiana Wild Life and Fisheries Commission

11:00 AM

FIELD TRIP
To U. S. Department of Health, Education, and Welfare, and State of Alabama Laboratory Sites

1:30 PM

ASSOCIATION ACTIVITIES
Ralph A. Richards
President, Alabama Fisheries Association

CURRENT APPRAISAL OF THE DEEP WATER FISHERY RESOURCES OF THE GULF OF MEXICO
Harvey R. Bullis, Jr.
Director, Exploratory Fishing and Gear Development
U. S. Bureau of Commercial Fisheries, Region 2

SUGGESTIONS FOR INCREASING GULF OYSTER PRODUCTION AND HANDLING OF THE PRODUCT
James N. McConnell
Chief, Division of Oysters, Water Bottoms and Seafood
Louisiana Wild Life and Fisheries Commission

PROSPECTS FOR MARINE GAME FISH RESEARCH IN THE GULF OF MEXICO
Paul E. Thompson
Chief, Branch of Fishery Research
U. S. Bureau of Sport Fisheries and Wildlife

RECESS *Ten Minutes*

3:00 PM

GSMFC SPECIAL COMMITTEE ON SHRIMP BIOLOGICAL RESEARCH (REPORT AND DISCUSSION)

Presiding:
Robert M. Ingle (Chairman)
Florida State Board of Conservation

Panel:
William J. Demoran
Mississippi Marine Conservation Commission

Joseph H. Kutkuhn
U. S. Bureau of Commercial Fisheries

Terrance R. Leary
Texas Game and Fish Commission

Jack C. Mallory
Alabama Department of Conservation

Lyle S. St. Amant (Secretary)
Louisiana Wild Life and Fisheries Commission

3:45 PM

ADJOURNMENT

4:15 PM

MEETING OF RESOLUTIONS COMMITTEE—Suite 130

Friday (October 19)

8:30 AM - 11:00 AM

COMMISSION EXECUTIVE SESSION BREAKFAST

9:30 AM - 11:00 AM

SCIENTISTS' ROUND TABLE:
George W. Allen (Presiding)
Alabama Department of Conservation
Theodore B. Ford (Secretary)
Louisiana Wild Life and Fisheries Commission

ESTUARINE PRESERVATION EDUCATION
William J. Allen
Wildlife Management Institute

Oct 18-19-1962 Dauphin Island

THE ANNOTATED BIBLIOGRAPHY OF UNPUBLISHED ESTUARINE RESEARCH IN THE GULF OF MEXICO
Philip A. Butler
Bureau of Commercial Fisheries

RESULTS OF TAXONOMIC STUDIES OF THE NORTH AMERICAN WHITE SHRIMP
Gordon Gunter
Gulf Coast Research Laboratory

DATA ON ALABAMA'S ARTIFICIAL SNAPPER REEFS
Jack Gaines
Alabama Department of Conservation

11:15 AM - 12 Noon

FINAL GENERAL SESSION
Summaries:
Scientists' Round Table
Commission Executive Session

ADJOURNMENT

★

Gulf States Marine Fisheries Commission
312 Audubon Building
New Orleans 16, Louisiana

Commissioners
Order of listing: Administrator, Legislator, Governor's Appointee

Alabama
William C. Younger
Will G. Caffey, Jr. (Vice-Chairman)
Max Lawrenz, Sr.

Florida
W. Randolph Hodges
Bruce J. Scott
Walter O. Sheppard

Louisiana
L. D. Young, Jr. (Chairman)
Alvin Dyson
Sidney A. Bourg, Sr.

Mississippi
Joseph V. Colson
Stanford E. Morse, Jr.
Hermes Gautier

Texas
Howard D. Dodgen
Richard H. Cory
Weldon Cabaniss

★

W. Dudley Gunn
Director

GULF STATES MARINE FISHERIES COMMISSION

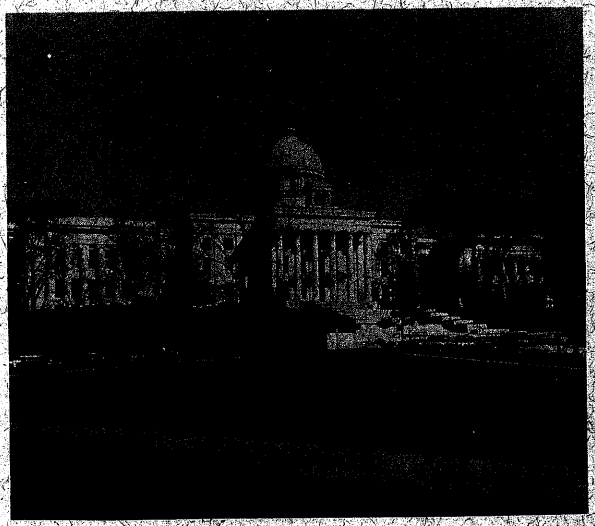
Thirteenth Annual Meeting

Holiday Inn
Dauphin Island, Alabama

October 18 (Thursday)-19 (Friday), 1962

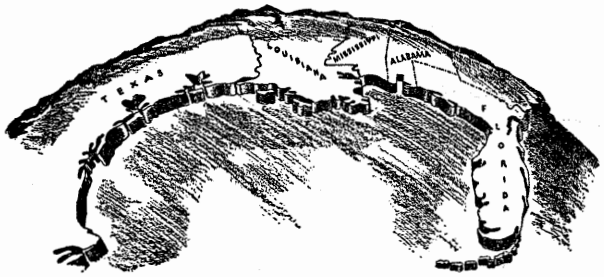
A cordial invitation is extended to all interested in the proper utilization of the marine fishery resources of the Gulf of Mexico. (Any local Holiday Inn will gladly make reservations free of charge via TWX. Convention rates: $8.00 single, $12.00 double).

If you travel by air, your plane will be met by a conservation officer in uniform at the Mobile Municipal Airport.



THE CAPITOL
STATE OF ALABAMA
MONTGOMERY

Gulf States Marine Fisheries Commission



M I N U T E S

REGULAR MEETING

HOLIDAY INN

DAUPHIN ISLAND, ALABAMA

OCTOBER 18-19, 1962

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

M I N U T E S

REGULAR MEETING, OCTOBER 18-19, 1962
Holiday Inn
Dauphin Island, Alabama

OFFICIAL ATTENDANCE OF COMMISSIONERS

	PRESENT	ABSENT
ALABAMA	William C. Younger Will G. Caffey, Jr.	Max K. Lawrenz, Sr.
FLORIDA	W. Randolph Hodges Bruce J. Scott Walter O. Sheppard	
LOUISIANA	L. D. Young, Jr. Feltus Daigle	Alvin Dyson
MISSISSIPPI	Joseph V. Colson	Stanford E. Morse, Jr. Hermes Gautier
TEXAS	Howard D. Dodgen Richard H. Cory Weldon Cabaniss	
PROXIES	Robert M. Ingle William J. Demoran	(For W. Randolph Hodges, 10/19/62) (For Stanford E. Morse, Jr., 10/19/62)
STAFF	W. Dudley Gunn	

OTHER STATE GOVERNMENT REPRESENTATIVES PRESENT

Governor John Patterson (Alabama), George W. Allen (Alabama), Arthur N. Beck (Alabama), William J. Demoran (Mississippi), Theodore B. Ford (Louisiana), H. V. Gibbs (Florida), Robert M. Ingle (Florida) Terrance R. Leary (Texas), Lyle S. St. Amant (Louisiana), George Williamson (Mississippi).

FORMER COMMISSIONERS PRESENT

Charles W. Bevis, James H. Summersgill, Bert E. Thomas.

FEDERAL GOVERNMENT REPRESENTATIVES PRESENT

U. S. BUREAU OF COMMERCIAL FISHERIES: Harvey R. Bullis, Jr., C. M. Fuss, J. Bruce Kimsey, Edward Klimm, Travis D. Love, Donald L. McKernan, Charles M. Roithmayr, George A. Rounsefell, J. E. Sykes, Seton H. Thompson.

U. S. BUREAU OF SPORT FISHERIES AND WILDLIFE: Walter A. Gresh.

U. S. PUBLIC HEALTH SERVICE: Robert M. Buckley, R. J. Hammerstrom, F. J. Silva.

REPRESENTATIVES OF INDUSTRY PRESENT

W. P. Clark, Mylan Engle, James N. McConnell, Kenneth McLain, James McPhillips, Max Rogers, Joseph S. Ramos, Joseph Zaghby.

REPRESENTATIVES OF COMMERCIAL AND SPORT FISHING ASSOCIATIONS PRESENT

William J. Allen, William R. Neblett, Ralph A. Richards, Earl M. Rome.

UNIVERSITY LABORATORY REPRESENTATIVES PRESENT

Everett Bishop, J. Y. Christmas, Jack Gaines, L. T. Graham, Gordon Gunter, E. S. Iversen, Jack Mallory, Sammy M. Ray, Joseph Riehl.

CLERGY ..... TRADE JOURNAL ..... NEWSPAPER REPRESENTATIVES PRESENT

Reverend Charles Aucoin ..... William Corbino, Marvin Fox ..... Buddy Smith.

GENERAL SESSION, OCTOBER 18, 1962

Commission Chairman Young called the thirteenth annual meeting to order at 9:40 a.m. Reverend Charles Aucoin, Pastor, St. Margaret's Catholic Church of Bayou La Batre rendered the invocation.

Before calling upon Commission Director Gunn for the roll call, Mr. Young introduced Messrs. Feltus Daigle of Louisiana, Joseph V. Colson of Mississippi, and Weldon Cabaniss of Texas; appointees to the Commission since the last regular meeting.

Chairman Young introduced Commission Vice-Chairman Will G. Caffey, Jr., for the purpose of presenting Governor John Patterson of Alabama. The Governor's great interest in the salt water fisheries resource was cited by Senator Caffey.

The Governor extended a most cordial welcome to the State of Alabama; mentioned the signing of the Compact on the Yacht Dixie on Mobile Bay in July of 1949; praised the work of the Commission since its implementation; and stressed the importance of continued fishery research to the development of proper laws and regulations. Praise was given the U.S. Public Health Service for its interest in shellfish sanitation on the Gulf as indicated through the construction of the Dauphin Island laboratory. The continued support of the Alabama Department of Conservation was promised. Governor Patterson extended his thanks to those who had contributed toward the erection of a Department of Conservation biological laboratory on the Island; both of which mentioned laboratory construction sites it was indicated were to be visited later in the morning.

After responding to the welcome the Chairman presented Mr. James McPhillips of the American Fisheries Advisory Committee for the purpose of introducing the next scheduled speaker. Mr. McPhillips briefly reviewed the fine accomplishments of Mr. Donald L. McKernan, Director, Bureau of Commercial Fisheries, as he had been privileged to observe them as a member of the Bureau's advisory committee.

Copy of Mr. McKernan's presentation is first attached to these Minutes.

Commissioner William C. Younger, Director, Alabama Department of Conservation, was commended by Chairman Young for his contribution as a member of the Commission's Alabama Delegation, as he was introduced. Mr. Younger stated that while it was regretted that the scheduled speaker, Mr. Wesley E. Gilbertson, could not attend the meeting due to illness, that the group would be pleased to hear from Mr. Richard J. Hammerstrom who had been appointed to direct the activities of the new Public Health Service Dauphin Island laboratory.

Copy of the paper presented by Mr. Hammerstrom is second attached to these Minutes.

The Annual Report of the Commission was next presented by the Chairman, copy of which report is third attached to these Minutes.

The Director was called upon for announcements, following which he introduced Mr. Howard D. Dodgen, former Commission Chairman, and Executive Secretary of the Texas Game and Fish Commission.

Mr. Dodgen expressed the deep appreciation of the Commission for the fine stewardship Mr. Young had exercised in his occupancy of the Chairman's chair during the year, and presented him with an engraved plaque which further expressed the gratitude of the body.

The morning session was adjourned at 11:00 a.m. At 11:15 a.m. the group motored to the construction sites of the Public Health Service and Alabama Department of Conservation laboratories. Mr. George Allen acted as guide for the visit to the Department laboratory and explained in detail the arrangement and facilities to be made available. The building, well on its way to completion, is expected to be in readiness around January 1. Mr. Hammerstrom briefed the group on what may be expected upon completion of the Service's laboratory, which building is in an early state of construction.

Shortly after the noon hour, the group accepted the kind invitation of the Mobile Area Chamber of Commerce in its attendance at an Isle Dauphin Club luncheon honoring Governor Patterson.

The afternoon session was called to order by Chairman Young at 2:00 p.m., and Mr. Ralph A. Richards, President of the Alabama Fisheries Association, was promptly introduced for a resume of the activities of that group. Mr. Richards' presentation has been reproduced and is fourth attached to these Minutes.

Mr. Harvey R. Bullis, Jr., Director, Exploratory Fishing and Gear Development, Bureau of Commercial Fisheries, Region 2, was next introduced and proceeded with a current appraisal of the deep water fishery resources of the Gulf. The paper was supplemented with the showing of colored slides of numerous of the species common to the deep water of the Gulf. Mr. Bullis introduced Mr. Charles M. Full, a staff member, who supplied the commentary on close up shots of shrimp burrowing in bottom sand. These shots were made, according to Mr. Fuss, in the nearby Panama City, Florida, area where both the water and sand has been found excellent for television filming in connection with the shrimp behavior studies. Copy of Mr. Bullis' paper, which includes a table of deep water species with their biological terminology, is fifth attached to these Minutes.

Chairman Young praised the next speaker for his work in interest of forming the Commission and thanked him on behalf of the body for his cooperation over the years. Praiseworthy reference was made by the Chairman to Mr. James N. McConnell's long service to the State of Louisiana as Chief of the Division of Oysters, Water Bottoms and Seafood of the Louisiana Wild Life and Fisheries Commission, prior to his retirement on October 1st. Mr. McConnell addressed the group with regard to increasing Gulf oyster production and handling of the product. He said that the Gulf states have the opportunity at this time, due to losses elsewhere, to take over the leadership of the United States in oyster production. Holding to a minimum size of 3" (hinge to mouth) was recommended. The Louisiana seed oyster program was explained in detail. Mr. McConnell recommended that other states follow the Louisiana plan of closing certain areas for two years, under which system small oysters are gathered for seed and

larger ones for sacks. With regard to care of oysters, it was stated that bacterial count had been reported as high in some instances of Gulf oysters reaching eastern destinations. The fact that industry on the Gulf had not shipped long distances until more recently, pointed up the necessity, according to Mr. McConnell, of exercising considerable precaution preparatory to delivering the product to the carrier. Keeping the oysters cold from the start was cited as a must. Warning was given about the leaving open of doors on pick-up of sack oysters. In conclusion, a Fish and Wildlife Service report of Gulf shrimp landings, January through September 1962, was read by Mr. McConnell.

Mr. Paul E. Thompson, Chief, Branch of Fishery Research, U. S. Bureau of Sport Fisheries and Wildlife, was scheduled to review the prospects for marine game fish research in the Gulf, but was unable to attend the meeting because of his presence being required in the Washington office.

A review of the expanded and fully implemented Federal Gulf Shrimp Research Program was presented by Mr. Seton H. Thompson, Director, South Atlantic and Gulf Region, Bureau of Commercial Fisheries. Copy of Mr. Thompson's paper is sixth attached to these Minutes.

A ten minute recess was called by Chairman Young and the meeting was resumed at 4:30 p.m.

Chairman Young introduced Mr. Robert M. Ingle of the Florida State Board of Conservation as Chairman of the Commission's Shrimp Biological Research Committee. Panalists (other committee members) were: Mr. William J. Demoran, Mississippi Marine Conservation Commission; Mr. J. Bruce Kinsey, Bureau of Commercial Fisheries (proxy for Dr. Joseph H. Kutkuhn); Mr. Terrance R. Leary, Texas Game and Fish Commission; Mr. Jack C. Mallory, Alabama Department of Conservation; and Dr. Lyle S. St. Amant, Louisiana Wild Life and Fisheries Commission (committee secretary).

Mr. Ingle reviewed the salinity tolerances study which Florida is currently conducting on the three leading species of commercial shrimp in the St. Johns River. Mr. Demoran explained the station check system for juvenile shrimp in Mississippi Sound and gave some growth rate findings. Sampling of 60 stations between the Mississippi River and Brownsville for biological and hydrographic data for information used primarily by the Bureau of Commercial Fisheries brown and white shrimp life history projects was presented by Mr. Kinsey. Returns from Bureau marking experiments in the Tortugas and northern Gulf were illustrated by charts, and results of the Galveston Bay postlarval and juvenile shrimp study were covered. Mr. Leary explained the sampling procedures employed by the Texas Game and Fish Commission, the continuation of which project is expected to yield accurate shrimp crop abundance preditions as year-to-year data is accumulated. Graphs of juvenile shrimp were shown. Sampling methods employed by Alabama were explained by Mr. Mallory. Dr. St. Amant said that Louisiana was using the same nets as the Bureau in order to facilitate comparisons of data collected. Station check procedures were detailed. A quarter-acre pond experiment on brown shrimp was said to indicate that the shrimp, which were not feed during the seven weeks study, grew half as fast as shrimp in nature. Dr. Iversen who is directing special Tortugas studies for the Marine Laboratory, University of Miami, under contract with the Bureau of Commercial Fisheries, told of the mark-recovery experiments in progress on pink shrimp which are expected to provide population dynamics information essential to management of the stocks.

Upon conclusion of the panel presentation, Chairman Young received no response on call for other subjects. The resolution committee was then appointed. Serving on the committee, which was scheduled to meet at 6:30 p.m., were: Commissioners Caffey of Alabama, Colson of Mississippi, Daigle of Louisiana, Dodgen of Texas, and Sheppard of Florida.

The session was adjourned at 5:45 p.m.

Friday (October 19)

The Commission Executive Session began at 8:30 a.m. with the serving of breakfast in the Holiday Inn restaurant. Twenth-eight guests of the Commissioners attended the session. Mr. Walter A. Gresh of the Bureau of Sport Fisheries and Wildlife spoke briefly on the prospects for marine game fish research in the Gulf. The Scientists' Round Table started at 9:30 a.m. as scheduled.

The Executive Session was adjourned at 11:15 a.m. and the Commissioners joined the group for the closing General Session.

Mr. George W. Allen, Alabama Department of Conservation, who presided at the technical session, was introduced for the purpose of apprising the Commissioners of proceedings.

The following notes from the three scheduled subjects were taken by Dr. T. B. Ford:

(Mr. William J. Allen, Wildlife Management Institute, on the subject "Estuarine Preservation Education").

Simply and generally, the numerous and varied problems associated with the threatening Gulf estuarine areas may be stated as biological, physical and chemical including the alteration or interruption of natural flows and/or regimen, and the actual physical alteration of land forms. Although the fundamental importance of estuarine areas to several biotic resources has long been recognized and a great body of relevant scientific data were compiled over the years, we are apparently unable to translate these data into a functional plan of management to insure the preservation and good health of these resources.

Three stumbling blocks which circumvent such planning to meet the increasing complexity of day-to-day resource management include (1) a lack of public awareness of the significane of estuarine areas, (2) scientific research and (3) research ability; these take money.

Thus, it is proposed that a symposium be organized that will present a synopsis of all phases of biotic research work conducted in Gulf estuarines due to the inseparability of the various components. By encouraging inter-discipline discussion at a common level, the crux of the real problem--- the political, social and economic enigma through practical application of scientific research--- may be reached.

A symposium will provide an insight for both resource managers and the public into the practical application of research, and for those working in the field, a common objective, a unified program, and the vehicle to carry these aims to the public as tangible assets. In attempting to influence public opinion and create support for the solution of natural resource problems through people management, it is the end result that counts.

Some expression of the value and need for such a symposium from this group, intimately acquainted with the problem, is sought. Those with whom it was discussed previously received it warmly.

Note: Action taken at the Scientists' Round Table.

It was generally agreed that this proposal has considerable merit. However, questions were raised concerning (1) the voluminous amount of work required in arranging and preparing for such a symposium, and, (2) other associated problems. Accordingly, it was decided to withhold any expression until the 1963 Spring Meeting in Fort Myers, Florida. This will permit further consideration during the interim period and will be scheduled at that time for discussion by the Estuarine Technical Coordinating Committee.

(Dr. Gordon Gunter, Gulf Coast Research Laboratory, on "Results Of Taxonomic Studies Of The North American White Shrimp").

Dr. Gordon Gunter showed that the name for the white shrimp was originally applied to a South American species up until the time Thomas Say described the North American white shrimp as Penaeus fluviatilis, which was the first mention in the literature of a penaeid shrimp in North America. When Burkenroad discovered that the North and South American species were different he jumbled the literature and attempted to set up a neotype of Penaeus setiferus from Matanzas Inlet, Florida. His designation was improper and did not correspond to the Rules at that time or to the present Code of Zoological Nomenclature, one reason being that this neotype was never presented for validation to the International Commission. In fact, a rigid interpretation of the Code indicates that neotypes are not necessary and would be very difficult to validate under the Code. Thus the proper name of the North American white shrimp is Penaeus fluviatilis Say, and the name of the South American white shrimp is Penaeus setiferus (Linnaeus).

(Mr. Jack Gaines, Alabama Department of Conservation, on "Alabama's Artificial Snapper Reefs").

Recent skin diving investigations of the several artificial snapper reefs located off the Alabama coast have shown that large numbers of some species of marine fishes tend to congregate at these reefs within a short period after establishment. Studies of these reefs have shown that these fish populations do not wait for the appearance and growth of the various fouling organisms and other invertebrates. Fish populations appeared to be maintained around the older artificial reefs. These studies are being continued.

Commission Chairman Young announced that no resolutions relating to research, exploration, or associated programs were offered for consideration at the Commission Executive Session. A cordial invitation was extended to the March 21-22, 1963 Commission meeting at Fort Myers, Florida. It was announced that the Fourteenth Annual Meeting would be held at the Broadwater Beach Hotel, Biloxi, Mississippi, on October 17-18, 1963. The group was advised that future meetings of the Commission would be scheduled for two days instead of the present $1\frac{1}{2}$ days programming.

The Chairman thanked the Commissioners and cooperators for their assistance during his term and presented Commissioner Will G. Caffey, Jr., as Commission Chairman and Commissioner Richard H. Cory as Vice-Chairman for the year 1962-63. Messrs. Caffey and Cory responded. The gavel was passed to Chairman Caffey, who heard no response to a call for further business, and the concluding General Session was adjourned at 11:55 a.m.

Prepared by: W. Dudley Gunn
Director

(COPY)

GULF STATES MARINE FISHERIES CIMMISSION
Dauphin Island, Alabama
Holiday Inn
October 18-19, 1962

"FISHERIES IN THE FUTURE"

Donald L. McKernan, Director
Bureau of Commercial Fisheries
Washington, D. C.

Introduction

It seems quite appropriate to me to come to the 13th Annual Meeting of the Gulf States Marine Fisheries Commission to discuss with you the fisheries of the future. I have not had the privilege of attending your meetings for several years, and I am looking forward with anticipation to the reports of progress from scientists and administrators.

This Commission, while the youngest of the three interstate fisheries compacts, obviously has been successful over the last 13 years in providing a forum for discussion, debate, and effective coordination of research and management of the fisheries of the Gulf of Mexico. The compact has done much more, though, to stimulate interest in fisheries in other ways. It has been effective not only in coordinating the State research and management, but also has insisted--and successfully so--that State-Federal cooperation in research was in the public interest. It has fostered this cooperation from the time of its founding in 1949.

Let us not pretend, however, that the Commission's work is completed, nor that we have been completely successful in all endeavors or in all fields. On the other hand, let us not forget that in most fields of man's endeavor, and this is especially true in the case of natural science, advances occur slowly and must stand the test of scrutiny, argument, and finally, field observations. This is true in most cases because these efforts in the field of marine biology and fisheries vitally affect man and his welfare. Thus, the Gulf States Compact provides this means for widespread debate and a place to plan for field testing of scientific theory.

I think this mechanism for coordinating fisheries research and management--originating here in the Gulf States--is the best means we have yet found of accomplishing our final objective of ensuring the full utilization, consistent with the highest principle of conservation, of the living resources of the sea adjacent to our coasts when these resources are fished by fishermen of several States.

The Commission's work is almost inevitably successful, regardless of individual effort, or the lack of it. This reminds me of a story. It seems that there were two prize Jersey cows laying in a beautiful green pasture one morning alongside a great eight-lane superhighway. They were complacently chewing their cuds when all at once a great milk truck and trailer thundered by. This was one of those giant tank trucks, carrying thousands of gallons of milk. On the side of the trailer in big letters were a series of signs reading Grade A milk, pure Jersey,

pasteurized, homogenized, vitamin and protein enriched with Vitamins A, B, C, D, and E. The two pure-bred Jerseys looked at this great, monstrous truck thundering by, read the signs on the side, and one Jersey turned to the other and said, "It somehow makes you feel inadequate, doesn't it!"

Well, the successful operation of this Commission leaves me with somewhat that same feeling of inadequacy. The efforts of one individual or of one agency are not, in themselves, important, but the combined efforts of all individuals and agencies produce inevitable forward motion and progress in the field of marine resources use and conservation.

The fisheries of the Gulf of Mexico have been among our country's biggest and most profitable. We can look with wonder at the increase in yield from the Gulf, especially if we remember that a decade ago, most fisheries biologists of our country thought that the Gulf of Mexico was a veritable desert and would produce little more that it was then producing. The growth of the Gulf fisheries has been extraordinary and exciting. These fisheries still show great potential for the future, possibly a greater potential than any other area in our country.

Thus, if we think about the future fisheries of our coastline, we inevitably think about the fisheries of the Gulf of Mexico and let our thoughts wonder about the undeveloped areas of the Caribbean and Western Tropical Atlantic.

Present Status of Fisheries

If we look at our fisheries development in terms of the world development, we may well be discouraged. Some people feel that we here in the U.S. have passed the crossroads and are beginning to see the end of an industry, the fishing industry of our country. I think not; I believe we are surely at the crossroads, but that we are in a position still to alter the trend of fishery production in the U.S. and to breathe new life and vitality into the industry.

Fishery production throughout the world has doubled every decade for about the past 30 years, production being over 40 millions of tons at the present time. Our own production during the past decade has increased at a much lower rate, from 2.3 millions of tons in the early 1950's to about 2.6 millions of tons in 1961; our catch now is a little less than 7 percent of the world catch.

Our relative position as a fishing nation, considering our annual catch, has suffered even more during the past decade; from a position of the second fishing nation in the world behind Japan, we have slipped to fifth place behind Japan, U.S.S.R., Red China, and Peru.

There has been another development in world fisheries of great interest to us which has occurred not only in our country but throughout the world. Industrial fisheries have grown rapidly in the U.S., Peru, South Africa, Angola, Canada, Norway, Japan, and some other countries. These fisheries use for the most part some of the great herring-like fishery resources of the ocean, which heretofore had been only sparsely used by man. Still other industrial fisheries use species of bottomfish which are not used for human food. The primary expansion in world fisheries, with few exceptions, during the past decade has been in these fisheries.

The fish catch of Peru, for example, has jumped from almost nothing less than 10 years ago--235 thousand tons in 1955--to second place in world production. Peru had a catch of 5 million tons of fish in 1961, almost wholly Peruvian anchovy, and this industrial fishery of Peru is still increasing today.

World Fisheries Problems

The development of world fisheries has created many problems, not only those dealing with the competition for and conservation of the resources, but also the competition for the markets of the world.

The post-war growth of fisheries--with some exceptions--has seen the advent of large distant-water fleets of vessels, some of which are of the 2,500-3,000 gross tonnage class, capable of fishing in any waters on the face of the globe and at practically any time of the year. The growth of the Japanese tuna and trawl fisheries is an example of this development. Japan has recently sent fleets of vessels into the Indian Ocean, Tropical Atlantic, and more recently has licensed two fleets for the Northwest Atlantic trawl fishery. Large fishing fleets of the U.S.S.R. have begun fishing the Northeastern Pacific Ocean and Bering Sea. Trawl and herring fleets of the U.S.S.R. have moved into the Northwest Atlantic, in numbers in excess of 100 ships, and more recently the Soviet Union has announced her intention of entering the tuna fishery.

Everyone in the Gulf area, dependent as you are on the shrimp fisheries, is well aware of the growth of the shrimp fisheries of various countries of the world, mostly with the view of using the lucrative and growing U.S. market. There are now about 50 foreign countries exporting shrimp to the U.S.

These developments in world fisheries--some off the coasts of countries where fish production has been very small in the past, and some on the high seas thousands of miles from the home ports of the distant water fishing vessels--have brought new stresses and new problems to the fore.

In some great fishing areas, such as the Grand Banks of Newfoundland and the North Sea, fishing vessels of many countries have fished and competed for common stocks of fish for centuries. New nations fishing such grounds add more competition and some new problems, but in many of these areas, rather well developed international commissions have evolved which reduce friction and in general provide for the same kind of coordination of conservation programs on an international scale as is provided by this Commission on a regional basis.

In some cases the international commissions have adopted rather effective conservation regulations to preserve the maximum productivity of the resources. In other cases, however, new problems have arisen when fishing fleets of one nation have fished the coastal regions of other nations. Usually the fishing nations are well within their rights to fish the resources of the high seas, but even so problems arise because of the competition generated by these high seas vessels of fishing nations.

For example, our tuna and shrimp fisheries have developed off the coasts of several Central and South American nations. There is in several instances competition for the resources and problems of conservation. Such circumstances

call for conservation conventions between the countries concerned, and in the case of the west coast tuna fisheries, such a convention has been formed. The Inter-American Tropical Tuna Commission has carried out research, and recently has recommended conservation measures which are now being implemented by the nations signatory to the convention.

Other fishery conventions have been formed in recent years, such as the International North Pacific Fisheries Convention, the now defunct U.S.-Cuban Shrimp Convention, and a new commission is being formed of countries of the West Coast of Africa. The problems of some existing conservation conventions have grown; the Whaling Convention, composed of 17 member nations, is having a very difficult time implementing conservation regulations which would preserve the whale resource in the Antarctic Ocean.

In addition to these resource problems, problems of marketing the world catch are also of importance. The fisheries of the Gulf are as much involved in this problem as are any of our fisheries. The menhaden industry, plagued 2 years ago with a world surplus of fish meal, is now in difficulty because of a large surplus of edible oils--including menhaden oil. The shrimp market, at one time largely a United States market, has in recent years seen increasing amounts of imports share the U.S. market. On the other hand, we have developed a small but expanding shrimp export market to Japan.

Other world marketing problems are developing. The European Economic Community, or Common Market as it is popularly called, was formed as a means of promoting trade among European nations, and may well have a major effect upon our fisheries trade. It may adversely affect our fisheries products trade with Europe, temporarily at least, but in the long run it also may provide for increased markets by the elimination of completely prohibitive barriers which now exist in some European countries. Countries such as Japan may have problems with their fisheries exports to Europe during the formative years of the EEC because existing trade arrangements may need readjusting. Such problems may mean a greater dependence by Japan on United States markets for a few years until new trade relations are established in world markets.

Within our own country, the fishery products must compete to an ever increasing extent with high-quality, convenient meat and poultry products. The pressure will continue to provide a greater variety of easy-to-prepare high-quality foods. This obviously is the way for the fishing industry to insure for itself a fair share of the growing consumer market.

The Future

All of this background points to the future. A number of questions can be asked, but they all lead to that one, all-important question: what does the future hold for our fisheries, and what can we do to influence the final outcome?

It seems probable that if our country feels that it is important to maintain a strong and prosperous fishing industry this can be done. The industry of the 21st century may well be of a very different kind than that which exists now. It likely will take a very different form and almost certainly will have fewer people engaged in fishing as we successfully mechanize our fishing gear

and provide more automation to methods of locating, concentrating, and harvesting the resources.

One can speculate about what kind of information and tools we need to maintain our industry. We can foresee that the basis for future fisheries is more research and knowledge, research and knowledge about the fishery resources and about the ocean itself. These are the essential tools as we move from a coastal, hunting-type of fisheries to intensive cultivation of coastal waters and a positive harvest of high seas resources. The location and harvest of these high seas resources can be made efficient through the application of scientific knowledge and modern technology.

Other requirements are necessary, however, for success in the future. State authorities must review their laws to see that unessential restrictions against fishing are removed and that the full and intensive cultivation and farming of the edge of the sea is encouraged. At the same time conservation regulations must be initiated which are based upon scientific fact, not political fancy.

Our National Government must see that the rights of its citizens are protected on the high seas and that its fishermen have free and fair access to the high seas fishery resources.

United States fishermen must also have the latest and most efficient gear to harvest these resources. This is a responsibility of both industry and Government.

Our industry has a right to equal access to world markets and must be assured of a fair profit if maximum use is to be made of the resources by our fishermen and industry. New uses must be found to fully use species which are now only partially utilized or not used at all.

Local and national laws and regulations must provide a favorable environment for investment and reinvestment and the public right to a large variety of high-quality products from the sea must be recognized.

These, then, are the essential elements in the formula for a prosperous and expanding future in fisheries. Our Nation, founded as a fishing nation, with a sea-faring background, can, with effort and will, continue to be an important fishing nation with a healthy and growing market for fisheries products. Such a course will not only provide continuing new economic wealth from the sea, but also will provide future generations with a varied, healthful, and plentiful supply of protein food.

(COPY)

GULF STATES MARINE FISHERIES COMMISSION
Dauphin Island, Alabama
Holiday Inn
October 18-19, 1962

"PUBLIC HEALTH SERVICE INTERESTS IN MARINE FOOD RESOURCES"

Wesley E. Gilbertson, Chief
Division of Environmental Engineering and Food Protection
Public Health Service
U. S. Department of Health, Education, and Welfare
Washington, D. C.

J. David Clem, Assistant Sanitary Engineer
Shellfish Sanitation Branch
Division of Environmental Engineering and Food Protection
Public Health Service
U. S. Department of Health, Education, and Welfare
Washington, D. C.

Presented by:
Richard J. Hammerstrom, Sanitary Engineer Director
Gulf Coast Shellfish Sanitation Research Center
Public Health Service
U. S. Department of Health, Education, and Welfare
Dauphin Island, Alabama

May I convey to you all the cordial greetings of the Surgeon General, Dr. Luther Terry. He would have liked to have been here with you, here in his home state.

I am glad to have this opportunity to discuss with you the interests of the Public Health Service in marine food resources and related activities, and especially so as regards the Gulf Coast. I am sure your Commission shares with the Public Health Service a deep and vital concern for Gulf Coast marine resources.

Information about the origin and development of shellfish sanitation activities in the Service may be of interest to you in explaining our purposes and goals in environmental marine sanitation.

Nearly 37 years ago the Federal Government was asked to assist the States in developing a program which would assure that raw shellfish such as oysters, clams, and mussels would be safe to eat. This request came about after an outbreak of typhoid fever, later shown to be transmitted by shellfish, and involved some 1,500 persons in three major cities in the United States. The Service at that time took on the responsibility of developing with the producing States and with the shellfish industry, a cooperative program involving standards, administrative procedures, and areas of surveillance for the sanitary control of oysters, clams and mussels. This program, still in effect, is known as the Cooperative State-Public Health Service-Industry Program for the Certification of Interstate Shellfish Shippers.

(Gilbertson, Clem, by Hammerstrom #2)

Recent Developments

Problems the industry face today were difficult to forsee 20 or even 10 years ago. Shellfishermen of yesterday were not concerned that the natural supply of molluscs would be depleted, that waters would become too polluted to be satisfactory for shellfish propagation, or that the public would not accept shellfish as a safe food. Yet this is exactly the situation we are in today--especially on the Gulf Coast.

Most of you will remember the unfortunate outbreak of infectious hepatitis attributed to oysters which occurred last year and affected several of the Gulf Coast States. Gross contamination by domestic sewage polluted an estuary where oysters were growing. This is an example close to home which shows that pollution from human wastes can deplete suitable shellfish growing waters. We all know, too, of other cases where chemical wastes, insecticides, herbicides, industrial wastes from pulp mills, refining plants, and nuclear power plants, are reducing the number of suitable shellfish growing areas.

The sanitation standards used in the early 1930's and 40's, and the administrative procedures of those years are no longer adequate to cope with the problem. We must realign our programs in the light of many new public health considerations in order to obtain a better understanding of all the intricate problems arising from the increased use of inshore waters for disposal of man-made wastes. Even though one individual type of waste may not be harmful, the combination of it with others could and often has become a definite public health threat.

Data from the U.S. Fish and Wildlife Service on oyster production in the Gulf Coast States during the period 1940 to 1959 show that there has been considerable change in levels of production in the several states with an increasing trend over this period. Florida, for example, has experienced almost a 100 percent increase in oyster production. In addition, with some of the States the changing levels of oyster production have been characterized by shifts in centers of production with the development of a number of new oyster producing areas.

It is important that these shifts in shellfish producing areas be accompanied by changes in sanitary surveillance and control. Some States will of necessity have to increase their controls over the shellfish industry. All must be aware of the changing ecological conditions, both natural and man-made, within their coastal waters.

Some Suggestions

A study conducted by the Public Health Service during the 1961-62 season brought out the fact that in almost every producing State there were deficiencies in the financing of activities and in the numbers of persons engaged in this work. In the Gulf Coast States, a comparison was made between a program based on financing requirements of the Public Health Service Cooperative Program and current program expenditures. In Florida, for instance, the industry has grown so rapidly that there is a real need for greater expenditures to insure improved shellfish sanitary controls. The adequacy of shellfish sanitation programs in most Gulf Coast States is dependent upon the coordinated activities of several State agencies including the State Department of Health, State

Department of Conservation, and State Fish and Game Department. There must be cooperation among the State agencies to preserve good overall sanitary control of the industry. Within each State every agency concerned with any aspect of shellfish sanitation must understand its precise role in the overall program.

One device that can assist a State in delegating authority for the sanitary control of shellfish is the Memorandum of Agreement delineating responsibilities of each State agency. This helps insure good communication among the agencies within the State and in turn facilitates concerted action in solving problems as they arise.

To administer and maintain an adequate shellfish sanitation program, adequate financing is required. Thorough surveys which assess the needs should be conducted, and additional funds should be solicited from the State legislatures. Making the needs and deficiencies known is a prerequisite to getting the funds needed. The difficulties the industry presently faces and will encounter in the future, if nothing is done to check the indiscriminate pollution of marine waters, should be assessed.

Service fees levied by the State and collected from the shellfish producers within each State also may be useful. Such fees could be used for maintaining satisfactory growing waters, checking pollution sources, strengthening pollution abatement programs, improving conservation measures, developing methodology, and thereby improve the quality of shellfish so that the product would have longer shelf-life.

In fields other than public health, programs in which the States provide monies that are matched by the Federal Government have proven successful. Formula grants have been applied and have worked effectively in fields such as water pollution, medical, highway construction, and others.

Research Grants

The management of the research grants administered in the Division of Environmental Engineering and Food Protection of the Public Health Service help to supplement and broaden both basic and applied research directed at strengthening our knowledge of environmental health. At the present time our Division is administering 175 grants totaling more than $3,000,000. which have been awarded to colleges, universities, health agencies, and other public and private institutions. Of this total, only 3 institutions and agencies in the Gulf Coast area are represented in environmental marine studies through grants totaling $47,258.

The amount of research presently being conducted in both environmental engineering and food protection fields is insufficient in relation to known problems. The number of unsolved problems is increasing in spite of the current level of research effort. For example, notable deficiencies exist in marine biology, including shellfish, from the standpoint of the safety and nutritional quality of marine foods. Officials of public health and other agencies concerned need also to encourage studies that evaluate anticipated research needs in the marine environment.

(Gilbertson, Clem, by Hammerstrom #4)

The many complexities existing in questions of shellfish sanitation require that the latest research skills, technology, and methodology be used. The research grants program offer but one of the many avenues for the scientists to work on studies relating man to his environment.

Our ultimate goal in shellfish sanitation is to work with the States to strengthen their programs to achieve sanitary control of shellfish growing, harvesting, and shipping so as to enable shellfishermen to produce increasing supplies of safe shellfish and thus help insure a stable industry contributing to the economic health of our nation. Through sound health and conservation measures it may be possible to enhance the status of the shellfishermen from that of hunters to farmers so that they can depend for a yearly income on natural resources.

This goal can be reached only if there is a genuine spirit of cooperation among each responsible State Agency, the Federal Government and the shellfish industry.

Role of the Federal Government

Many new problems that are arising from our rapidly-developing country stem from new types of wastes dumped into coastal waters which were never put into the aquatic environment in the past. The behavior and fate as well as the hazards of these many new contaminants are not known and must be analyzed and evaluated for their effects on marine food resources.

The 87th Congress, realizing the need, made possible the construction of two new shellfish sanitation research centers, one located here on Dauphin Island and the other at Kingston, Rhode Island. These two centers will be completed and ready for occupancy next summer. There will be provided in each center a nucleus of highly skilled scientists who will evaluate the most urgent problems in the field of shellfish sanitation.

The Kingston center will have a special facility for developing a system for the depuration of shellfish, or in other words, to make shellfish free of impurities and pathogenic organisms. This process may be likened to the pasteurization of milk or the safeguarding of drinking water through water treatment. The depuration of shellfish may offer good possibilities for development and expansion for commercial use in the future.

The research center that is being built here on Dauphin Island will have a staff of 35 people, which will conduct studies in microbiology, radiology, toxicology, and chemistry. We hope that solutions and methods developed here will be of value in resolving some of the problems that have plagued the industry for the last few years. This center will serve all of the Gulf Coast States and will provide consultative assistance on unusual problems that may arise. Training programs also will be instituted at this center for State, local and Federal personnel who are concerned with shellfish sanitation.

The Public Health Service will continue to play an active part in cooperative research projects by providing both specially trained personnel and equipment. Projects of this type have been conducted along the Gulf Coast in the past on a small scale. By recognizing the real problems involved and working together

with all interested parties of the Gulf Coast areas, the Service hopes to contribute to the well-being of an industry which is of great importance to the Nation.

We are looking forward also to working in cooperation with Alabama's new State Seafoods Laboratory. The development of a close association between the two facilities on this Island will surely be accomplished and should help to pinpoint the area as one of the leading marine foods research locations in the Nation.

The Public Health Service today is greatly concerned with marine food resources and how they affect the well-being of man. By keeping abreast of problems that arise, and by assisting in solving them, we may help the shellfish industry to further growth and prosperity. This can be accomplished, we believe, by a sincere and wholehearted recognition of environmental problems by all concerned and through State-Public Health Service-Industry cooperation in maintaining the status of shellfish as marine foods that are wholesome, delectable, and safe.

(COPY)

GULF STATES MARINE FISHERIES COMMISSION
Dauphin Island, Alabama
Holiday Inn
October 18-19, 1962

"COMMISSION ANNUAL REPORT, 1961-62"

L. D. Young, Chairman
Gulf States Marine Fisheries Commission

This has been a fine year for marine fisheries research in the Gulf area.

As Commission Chairman during the past year, it has been one of my several duties to periodically review the status of research of all categories being accomplished by the fishery administrations of the member states of Alabama, Florida, Louisiana, Mississippi and Texas, and the Bureaus of Commercial Fisheries and Sport Fisheries and Wildlife. The resumes of activities of the several agencies which have been made available for your study, attest to the statement that this has been a fine year for the research effort on the Gulf.

There is a closer cooperation and approach to the enforcement problems of the several states, and the tri-state enforcement conferences chairmaned by William Younger has been increased to all five Gulf States and these states main contact as the occasion necessitates.

We are especially pleased that in the year 1962-63 a fully implemented Federal Gulf Shrimp Biological Research Program will become a reality. The expanded program now going into effect is the result of some eight years of effort and the Commission is most grateful for the additional Congressional appropriations, over the past two years, which have brought the total Bureau of Commercial Fisheries allocation to approximately $765,000 per annum for this work. The shrimp research programs of the member states continue to be broadened. It is the Commission's firm belief that, if the current pace of this research can be maintained for from four to five years a more judicious management of the shrimp fishery can be attained, and that the industry will profit additionally through crop evaluation data.

It should be acknowledged that while the research effort on the Gulf has been confined largely to the brown, pink and white shrimp, we must begin thinking about the red and other species in the deeper water as the Pascagoula exploratory program continues to expand the Gulf's commercial shrimp potential.

Speaking of exploration in general, it seems that the Bureau of Commercial Fisheries is continually adding new species to the fishery potential of the area. We know quite a bit about some of the findings; for example, it is now known that large stocks of yellowfin tuna are available to longline gear. The commercial prosecution of this resource has been negligible, as has snapper trawling over rough banks. Scrap fish taken for petfood amounts to approximately 75 million pounds per annum and represents a more tangible accomplishment of the

exploratory program. Recent exploration has proven that this fishery can be greatly expanded. Doubtless it will be as the animal population increases. Although not yet worked-out, we are informed that vast quantities of thread herring and other sardine-like fishes exist in the Gulf. Eventually, these species will be harvested both for human and industrial consumption. The bringing of these and other of the finfish and shellfish resources into production will necessitate additional investigations in the biological, technological and statistical fields.

The Commission is pleased to have the assurance of its muchly appreciated team of scientists that, in the overall picture, none of our fisheries are feeling the year-to-year increased fishing pressure. The Gulf's second ranking fishery in ex-vessel value and largest tonnage producer - the menhaden fishery- set a landings record of 1 billion - 9 million pounds in 1961. Vast areas are yet available for exploitation. The oyster fishery produced 13.7 million pounds of meats in 1959. The yield went to 16.1 million in 1960. Preliminary returns indicate in excess of 18 million pounds for 1961. Broad acres of water bottoms remain to be brought into production as the tempo of leasing, and shell and seed oyster planting increases in interest of our third most valuable fishery. The blue crab industry has recorded remarkable gains and is destined to register still further advances with the continued assistance of the Bureau of Commercial Fisheries technologists. The speckled trout and the two most important species of drum - redfish and blackdrum - are constantly being subjected to added pressure, more from the sport than from the commercial fishermen. No evidence has been supplied to cause the Commission to believe that these fisheries are in other than a healthy state of abundance.

While the conservation agencies are indeed gratified to know that there generally exists no depletionary trends in the fisheries, those responsible for the preservation of these renewable resources have realized for some years, that those fisheries most important to the commercial and recreational fishermen depend during a large part of their life cycle upon the estuarine areas. It is known that these areas are being threatened through industrial and residential expansion. We are working toward minimizing the ill effects of this encroachment and with some degree of success. It is heartening to note that the public at large is beginning to appreciate the necessity of conserving the near-to-shore water bottoms but our people still have a sizable public relations task to perform.

In conclusion, please permit me to express the most sincere thanks of the Commission to the laboratory directors and staffs of the two Bureaus of the U. S. Fish and Wildlife Service, and the five Gulf states, for their cooperation throughout the past year. Such measure of success as has been attained by the Commission during the year can well be attributed in considerable part to the untiring efforts of its long list of cooperators engaged in the many fields of fisheries activity. We have well proven the close relationship of joint endeavor to accomplishment. Let us strive to further advance the fisheries of the Gulf through continued team effort.

(COPY)

GULF STATES MARINE FISHERIES COMMISSION
Dauphin Island, Alabama
Holiday Inn
October 18-19, 1962

"PUTTING FIRST THINGS FIRST"

Ralph A. Richards, President
Alabama Fisheries Association
Mobile, Alabama

Since our discussion concerns basic principles, let us get our authority from the most basic source, "The Bible". Genesis 1:26 points out that the first job assigned to Man was dominion over the sea and the creatures therein, thus establishing the first industry. Secondly, the agricultural industry was created by God.

Today, thousands of years later, these two basic wealth producing industries are the two most important in our economy, the other two basic wealth producing industries being that of mining and manufacturing.

We are told that the world faces an acute food shortage. The reason being that the rest of the world is not blessed with successful operation of these two basic industries, fishing and agriculture.

The Soviet Union points this out very vividly in their frantic search for proteins. Who have these people been fishing our waters in our northern fishing grounds for some time? Is it because pollution destroyed their home fishing grounds? Recently, they have moved into the Gulf of Mexico to tap the resources of the "Green House" of the Atlantic. The Soviet Union, through their failure to succeed with their farm program, realizes that they must rely on fishing to maintain their position as a world leader.

It becomes more evident daily that our superiority as a world power comes from one source, "God" and our "God Given Resources". We, of Alabama Fisheries, believe in our industry. We believe in the creator of this industry. We further feel that our industry and its people are entitled to full protection from its enemies, by our State and Federal Government. For this reason, the Alabama Fisheries Association was founded.

It seems the general public wants to help the fishing industry, which is good. We appreciate this sympathy. We want to make sure everyone knows how to help. This is why we are taking first things first - with our stand against water pollution - for this is the principal problem of the industry, from which we must be protected.

To further justify our plea for protection, we would like to cite soma parallel examples.

Recently our Federal Government sold over 500 million dollars worth of bottom

leases 200 miles out in the Gulf of Mexico. The purchasers of these leases are guaranteed protection by our Navy. Are we not entitled to the same protection? What is the difference in leasing oyster bottoms in good faith and having them destroyed by water pollution? Do we have to settle for less rights - because we have a smaller voice. Can we accept this talk that a basic wealth producing industry is a victim of progress? If so, whose progress, ours or our enemies? Why does a student entering a university enjoy armed protection when his rights are threatened but a fisherman is told he is the victim of progress and doesn't have the right to make a living? Why? We are telling you why, simply because we have failed to put first things first.

We must be for, or against, water pollution. There is no compromise with this situation. We are right - the polluters are wrong. They must be stopped. We ask that you support us in this endeavor.

We very strongly feel that no one has the inherent right to use our rivers as conduits of waste, and our bays as cess pools, and our gulf as a disposal.

Our States have always maintained that they do not need Federal intervention in State business. We should give them a good opportunity to prove themselves on water pollution.

It is our understanding that since 1930 research has been conducted on fish and shellfish in our Gulf States area. Also, our individual States have spent many dollars in conservation of our fishing resources. Yet, we have allowed unprotested and uncontrolled water pollution to make a mockery of this entire program. How could we have been so foolish to let this happen? Why are we so hesitant in doing something about it? We are amazed that the sportsmen, through the Wildlife Federation, have had to take the initiative in sponsoring anti-water pollution legislation. Why can't we, the pros, with all our professional advisors, take the lead?

Do you really believe the solution to this problem is to avoid it? Are you willing to concede that our inland and coastal waters are lost to the commercial fishermen? To advocate deep water research and deep water equipment when our areas plagued with pollution indicate this concession.

We, of Alabama Fisheries, do not hold with this theory at all. We advocate concentrating our research facilities on water pollution, and suggest that our marine biologists and health authorities work with the industrial chemists and municipalities to insure healthy and productive fishing grounds. Then, after this is done, go back to our studies and further research. In so doing, we will have saved a basic wealth producing industry and improved the economy of our country.

In doing so,we will have put first things first.

(COPY)

GULF STATES MARINE FISHERIES COMMISSION
Dauphin Island, Alabama
Holiday Inn
October 18-19, 1962

"A CURRENT APPRAISAL OF THE DEEPWATER FISHERY RESOURCES OF THE GULF OF MEXICO"

Harvey R. Bullis, Jr., Base Director
Gulf and South Atlantic Exploration
and Gear Research Base
Bureau of Commercial Fisheries
Pascagoula, Mississippi

Not infrequently commercial fishermen in the Gulf area ask us in the Exploratory Fishing Program why we do not confine our work to reasonably shallow depths. The question then arises as to what is "shallow" which of course must be defined as the trawling-depth capabilities of the particular vessel under discussion. In general terms the conventional trawler in the Gulf of Mexico is rigged for trawling in depths of less than 50 fathoms and the critical factor in regulating depth limitation is the wire capacity of the winch.

The evolution of the shrimp fishery and development of the fleet as we now have in the Gulf and along the south Atlantic coast is well known. To harvest the three species of Penaeus that are the foundation of this fishery there has been no need to look beyond the 50 fathom curve since the incidence of commercially important concentrations has been considered negligible. Likewise, the only other trawl fishery in the Gulf, providing raw material for petfood, has been restricted to shallow water, for the most part within the 25 fathom curve. Here there has been no need to go deeper because up to the present time an adequate supply is readily available inshore.

Catagorical statements should always include some kind of reservation, but I think it is quite safe to say that the several thousand shrimpers in the Gulf have left very few square feet of trawlable bottom within the 25 fathom depth unexplored for shrimp. Quite likely this estimate could be extended out to the 50 fathom contour. Primarily for this reason the exploratory trawling program conducted by the Bureau of Commercial Fisheries, particularly since 1954, has been directed toward the depths beyond the capabilities of the existing fleet and shallow water work has been generally restricted to cooperative explorations with various fishermen groups or exploratory surveys in the Caribbean and South American area. So, from the preceding discussion and for purposes of definition I would like to assign this "deep-water realm" to those depths outside of the 50 fathom curve.

The fish and crustacean bottom fauna of the Gulf of Mexico past the 50 fathom curve and extending out to well beyond the 1,200 fathom contour is exciting and strange, with a profusion of species that almost defies description. We have identified or received identifications on some 1,500 species of fish and some 750 species of crustaceans including over 100 species of shrimps, and there are many more awaiting identification. In addition, there are hundreds of species

belonging to other groups. Among the fishes almost 100 new species have been described from these explorations. And there are roughly 50 to 60 species of crustaceans known to be undescribed and new to science, not including a number that have been recently named. I mention this only to point out that in this appraisal there is much left unsaid, and I will try to narrow down to selected specifies as to depth range and species.

Between 50 and 100 fathoms only one species of shrimp (some brownies caught in that range) large enough to be of commercial interest has been caught with any consistency, Solenocera vioscai. This species has been encountered by occasional commercial trawlers conducting explorations peripheral to the brown and pink shrimp grounds and there have been at least two sizable landings, noted back in 1957. This species appears to be widely distributed from the Gulf to Brazil but concentrations rarely exceed 25 pounds per hour tow. As with many of the other species I will discuss, it appears that present day commercial shrimp trawls may not be too effective in harvesting them and experimental gear work may prove the existence of a greater abundance than now suspected.

Between 100 and 150 fathoms, except for occasional Solenocera, shrimp of any species are rare and the commercial shrimp potential appears nil.

From 150 to 200 fathoms a small to medium-sized pinkish shrimp, Penaeopsis megalops, is distributed continuously from the northeast coast of Florida, around the Gulf, down into the Caribbean, and across to the northeast coast of South America. In some respects this may prove to be one of the most under-rated shrimp species in our area. Most of the exploratory records have been made while working on the deeper and larger royal red shrimp, but hauls of 200, 300, and 400 pounds per tow have been made in many areas. Recently some interest has been expressed in megalops by various canners and testing for this purpose has begun. About all that can be said on these tests right now is that the product is different from shrimp canned from shallow water, resembling in taste the species from the Pacific northwest. Based on our information to date, catch rates (apparently unaffected by seasonal factors) of 500 to 2,000 pounds per day are feasible in the eastern Gulf using conventional gear. These figures are merely projections from catches that have been made over the years and perhaps fall more closely into the area of "guesstimates".

In the 200 to 300 fathom range there are a great number of species of shrimps and prawns. To date our major effort has gone into the assessment of royal red shrimp, Hymenopenaeus robustus. Much of this work has been the subject of earlier presentations to the Commission so perhaps I can give but a brief resume. Between 1950 and 1958 three large beds of royal red shrimp were delineated; in the northeast Gulf, off Dry Tortugas, and off the east coast of Florida. Two commercial production attempts were made on the east coast bed. A group of three to five vessels worked it during the Spring of 1957 prior to their departure for the grounds off northeastern South America. An unconfirmed total of 52,000 pounds of headed shrimp were landed. 19 vessels worked the bed during a four month period this past winter and spring. Landings from the 13 vessels operating out of St. Marys, Georgia, amounted to some 69,000 pounds, five of the vessels accounting for some 50,000 pounds of the total. Early in June catch rates started to decline and all of the vessels departed for inshore fishing on white shrimp.

Only a few courageous souls have attempted fishing the gulf grounds east of the Mississippi Delta. Some 3,000 pounds were landed this summer by a Texas vessel that had put in approximately 5 days of fishing effort.

Good possibilities exist for the location of additional red shrimp grounds, and four cruises of the OREGON over the past five years into the Caribbean have had this as an objective. Two prospective areas are off Trinidad and along the coasts of Honduras.

Another species of interest in the 200 to 300 fathom range is the pandalid shrimp Plesionika longipes a large, striped shrimp that has been caught during explorations in the eastern gulf at rates of up to 300 pounds per tow. Virtually no work has been directed at this species to date. Also, a group of species belonging to the genera Nephrops and Nephropsis, and commonly known as Danish lobsters locally. Incidental catches during red shrimp trawling have reached several hundreds of pounds and were readily marketed by the commercial vessels landing in St. Marys earlier this year. I would hesitate to assign any commercial potential to Glyphocrangon, a medium-sized shrimp with a rock-hard shell heavily studded with sharp spines, but they apparently met with ready sale last spring as a specialty item bringing the incredible price of 40¢ per pound heads-on. Let it suffice to say that these and many more equally "different" species have been caught incidentally to red shrimp work at rates of hundreds of pounds per hour.

Beyond the 300 fathom contour occurs a giant scarlet-red shrimp Plesiopenaeus edwardsianus which reaches a size of three to a pound, and averages about 10 per pound. This species is caught commercially off northwestern Africa by Spanish trawlers working in depths of 250 to 300 fathoms. Last year landings amounted to about 300,000 pounds. Our exploratory work in depths beyond 300 fathoms is still in an early phase and not much authoritative information can be assembled to this time. Catches of 35 to 40 pounds have been made with relatively small shrimp trawls and we have caught Plesiopenaeus as deep as 1,200 fathoms. Within the same depth range large numbers of Geryon, a large deep water crab, have been caught. This crab has aroused some interest off the New England states but is not being fished commercially as yet.

For the most part deep water exploration has been confined to bottom trawling for shrimp-like species and what we know about the incidence and abundance of fin fishes has been derived from catches made with gear not designed to catch them. In the 50 to 150 fathom range two species deserve closer scrutiny; the yellow-eyed snapper (Lutjanus vivanus) and the broad flounder (Paralichthys squamalentis). Both have widespread distribution throughout our region and apparently concentrate in fishable areas. These two species closely fit the current criteria for "high-priced fish". Large numbers of Scorpaenidae are also present, closely related to the New England redfish, although it is doubtful that schooling concentrations are present approaching those in the more northern waters. Beyond 150 fathoms and out to about 350 fathoms hake (Merluccius) and whiting (Physis) are found widely distributed and occasionally in large numbers but again we have no evidence as yet that these concentrations approach those in more northern waters. Catch rates have exceeded 1,000 pounds per tow with a shrimp trawl and this seems worth mentioning.

(Bullis #4)

Our work in the deep pelagic zone has been limited and confined to cruder types of sampling. A number of pelagic shrimps have been identified from this work but reliable quantitative data has not been obtained as yet.

(SHOW SLIDES)

LIST OF KODA SLIDES

Slide No.	Subject	Habitat
1	Solenocera vioscai	bottom - 50-100 fms
2	catch of Penaeopsis megalops	
3	Penaeopsis megalops	bottom - 150-200 fms
4	Hymenopenaeus robustus	bottom - 200-300 fms
5	heading Plesiopenaeus edwardsianus	bottom (?)300-1,200 fms
6	a box of Plesiopenaeus	
7	Plesiopenaeus edwardsianus	
8	Plesionika longipes	bottom - 200-250 fms
9	Plesionika ensis	bottom - 200-300 fms
10	Glyphocrangon spinicauda	bottom - 200-300 fms
11	Glyphocrangon aculeata	bottom - 200-300 fms
12	Heterocarpus ensifer	bottom - 250-350 fms
13	Eugonatonotus crassus	bottom - 200-400 fms
14	Oplophorus gracilirostris	pelagic -
15	Notostomus sp.	pelagic -
16	Ephyrina sp.	pelagic -
17	Acanthophyra sp.	pelagic
18	Nephropsis aculeata	bottom - 200-250 fms
19	Phoberus caecus	bottom - 250-500 fms
20	Collodes (?)	bottom - 250 fms

(Bullis #5)

Since the start of our program the principle exploratory tools have been commercial fishing gear, adopted and adapted from the industry. This has provided a useful standard of comparison for commercial evaluation. However, a few years ago our Gear Research Unit began an intensive study on the performance characteristics of contemporary commercial shrimp trawls and the reactions and behavior of shallow-water shrimp species that is directly related to their capture by commercial trawling gear. Some of the early results have raised a doubt about the efficiency of our present-day trawling gear.

While the basic objective of the Gear Research Unit is the improvement of gear and methods for industry we are hopeful that the work in progress will provide better exploratory tools for more precise evaluation in the future. Of particular interest at the moment are the studies in progress on the behavior of penaeid shrimp directly related to escapement from trawl capture. With Mr. Gunn's permission I have asked Mr. Charles Fuss of the Gear Research Unit to assemble a short film which depicts some new aspects of this work.

(COPY)

GULF STATES MARINE FISHERIES COMMISSION
Dauphin Island, Alabama
Holiday Inn
October 18-19, 1962

"EXPANDED SHRIMP RESEARCH PROGRAM"

Seton H. Thompson, Regional Director
Bureau of Commercial Fisheries
St. Petersburg Beach, Florida

At a special meeting of this Commission in January 1954, a resolution was adopted requesting participation of the U. S. Fish and Wildlife Service in a shrimp research program "involving the establishment of useful and adequate statistics, sampling the catch for size and species composition, development of marking techniques, differentiation of species and stocks at all ages, an ecological study including mechanisms that transport larvae into inside waters and general ecology of nursery grounds, and maintenance of records of manmade and natural changes in the physical environment, ..."

Nine years and four resolutions later, we can report for the first time that all aspects of the program proposed at the 1954 meeting are either actively being studied or will be undertaken at the proper time this year. This goal was achieved when Congress met our best estimate of what it would cost to do the job. With about $3/4 million dollars of Federal funds for biological studies on shrimp, plus $150,000 for the collection of detailed biological statistics, and $200,000 for shrimp gear development, we are giving the Gulf shrimp resource the closest scrutiny it has ever had. Add to the Federal funds earmarked for shrimp the amounts being expended by the Gulf States, and we have altogether a $1 1/2 million shrimp program. That sounds like a lot of money, but it still is small in relation to the value of the annual shrimp harvest from our waters.

The primary objective of the shrimp biology program is to determine what factors are responsible for fluctuations in abundance and availability of our shrimp stocks. We want to know specifically the optimum size at which they should be taken and, if it is possible to do so, we want to develop a practical method for predicting their abundance.

The recommendations of the Committee on shrimp research, adopted by the Commission at its March meeting in Galveston, specified that knowledge of growth and mortality was most urgently needed. Work is in progress to meet this need. Two experiments on pink shrimp marked with vital stains and released in south Florida have been completed with interesting results that you will hear about later in the program. A third experiment is scheduled for next month. Five staining experiments on brown and white shrimp in the offshore waters of Louisiana and Texas have been completed so far, and returns are still coming in. Other experiments are planned on white shrimp in Alabama this fall and next spring: on brown shrimp in large numbers in the Brownsville to Pensacola area next spring and summer; and, as I have said, on pink shrimp in the Tortugas area next month.

Further evidence of the dynamic changes that take place in the shrimp populations is to be found in the statistics of the commercial fishery. These statistics are probably more complete than for any other ocean fishery. Nevertheless, there have been some deficiencies which are now being remedied by systematic sampling at major landing ports. It is a well-known fact for example, that the landings do not always reflect catches because undersize shrimp may be discarded at sea. Comparison of port samples with samples of catches on the grounds will indicate to what extent this happens. Some landings are not sorted by species and size, and at times pinks have been sold as browns. These inaccuracies are eliminated from our statistics by port sampling.

Port sampling started in Port Aransas, Galveston, and Morgan City last year. It is being extended now to include also Brownsville, Golden Meadow, Pascagoula, Tampa, Fort Myers and Key West.

With this systematic biological sampling of landings under the expanded program, it will be possible to trace accurately the various broods as they pass through the commercial fishery, and assess their relative size.

Analysis of these more accurate commercial catch records, together with the results of the completed and planned mark-recovery experiments will provide the "population dynamics" information needed to manage the stocks: growth and mortality, and their combined effect on yield; relationship between fishing rate and supply; and maintenance of the stocks.

In the area between the Mississippi and Rio Grande Rivers, 60 stations extending from a depth of 7 to 60 fathoms have been sampled every month since January 1962. After a complete year of sampling, the research staff will evaluate the importance of each of these stations. Some will be continued, others will be dropped, and new ones will be added. It is our intention to extend this offshore survey to waters east of the Mississippi River.

At each of these stations a standard haul is made with a commercial shrimp trawl, a plankton sample is taken, and various hydrographic observations are made. The trawl hauls indicate the distribution of adult shrimp and the areas and extent of spawning activity throughout the year. The plankton samples indicate the distribution and density of larval shrimp during their passage from offshore spawning grounds to inshore nursery grounds. We are now trying to recruit an oceanographer to analyze the accumulated mass of hydrographic data and relate them to the observed fluctuations in abundance of larvae, portlarvae, and adult shrimp. Qualified oceanographers are hard to find, but this should be a facinating project for someone.

The density of larval shrimp based on plankton samples in offshore waters is the first clue to the size of the prospective shrimp crop. A second measure is obtained by sampling the postlarval shrimp as they enter the passes to their nursery grounds. We have three years of such records for Galveston Bay and Florida Bay. Similar studies are being made by the States of Texas and Louisiana, and we intend to extend this postlarval sampling to the area between Mobile Bay and the Mississippi River by contracting with the Gulf Coast Research Laboratory-- Dr. Gordon Gunter and his staff.

The indices of abundance derived from observations of larvae and postlarvae can be further verified by estimating the relative abundance of juveniles. In Galveston Bay such an estimate is obtained from the bait fishery, and in the Tortugas area we will approach this by sampling the outward movement of juveniles from the estuary, and by carrying on a simulated bait fishery in waters midway between the estuary and the fishing grounds.

From the work in Galveston Bay, we are encouraged to believe a simple, inexpensive and reasonably accurate method of predicting shrimp abundance can be developed. If this is to be a useful tool for management, it has to meet these criteria.

In addition to the expansion of biological research on shrimp, funds were provided this year to expedite studies on the efficiency of shrimp gear. You have all seen the underwater motion picture film showing the performance of shrimp trawls under various conditions of actual operation. The next step and probably the most important phase of this study will have to do with the behavior of shrimp and their reaction to the gear. For example, knowing something about the burrowing habits of shrimp, and their response to electrical charges, it appears that an electric tickler chain can be used effectively. Research has gone far enough on this that we expect to field test a prototype very soon. Other similar gear improvements for shallow water operations are under consideration.

With the shrimp industry showing increasingly greater interest in deep water species, we plan to give attention to some of the problems involved in deep water trawling. For example, towing down current has caused the fouling of gear and loss of catches. We will attempt to get better information on this and other problems by using recently developed sensitive recorders and detectors, as well as an improved underwater TV system. These studies are all designed toward increasing the efficiency of shrimp trawl gear.

A research program of this magnitude is the product of many minds. No one person is responsible for it. In our Bureau, however, one person has taken the lead to keep shrimp research in the Number 1 priority spot. He has worked hard to obtain the facilities and equipment with which to do the work, and has selected, organized, and trained a staff of competent scientists. I am talking about Dr. George Rounsefell. Mr. Chairman, I want to recognize Dr. Rounsefell at this time for his leadership and persistent effort in launching this program. Ordinarilly, we would save these bouquets until more accomplishments have been recorded, but enough progress has been made already to give us assurance of total success. Especially, I want to express these views now, because Dr. Rounsefell soon will be leaving this area. Probably this will be the last meeting of this Commission he will attend. I appreciate this opportunity to state publicly how grateful we are for the fine work he has done as Director of our Galveston Laboratory.

Our loss of Dr. Rounsefell is going to be Southern California's gain. They have some problems out there, too, and he is going out to help solve them.

(Thompson #4)

Some of you are wondering who will succeed Dr. Rounsefell in the important position he is leaving. I can tell you now his successor is a man who helped to pioneer the research on shrimp in the Gulf of Mexico back in the early 1930's, and he has followed it closely through the years. He is Milton J. Lindner, at present Fishery Attache in Mexico. He is known to many of you. You can be sure he will ably carry on the work that Dr. Rounsefell has started.

We have a shrimp research program designed by the best brains in the business; it is well financed and soon will be fully staffed. Our future reports will describe results instead of plans.

M I N U T E S

Executive Session, Dauphin Island, Alabama, October 19, 1962

Delegates numbering 28 joined the Commissioners for an 8:30 a.m. breakfast, October 19, at the Holiday Inn. No formal program was scheduled but at the request of Chairman Young, Mr. Walter A. Gresh, Regional Director, Bureau of Sport Fisheries and Wildlife, Atlanta, Georgia, gave an impromptu look into the prospects for marine game fish research in the Gulf.

Guests were excused shortly before 9:30 a.m. for the scheduled Scientists' Round Table.

At the opening of the Executive Session, Mr. Robert M. Ingle was seated as proxy for Commissioner Hodges of Florida, and Mr. William J. Demoran was recognized as proxy for Commissioner Morse of Mississippi.

Commissioner Dodgen moved that the Galveston Meeting Minutes, March 15-16, 1962, be approved as mailed to the Commissioners April 26. Commissioner Sheppard seconded. On vote the motion passed.

Director Gunn reported a Commission bank balance of $13,620.26 at the close of business September 30. Also, that a check for the Alabama 1962-63 dues, payable October 1, had been received in the full amount of $3,500. Commissioner Colson stated that while $1,000 was paid in dues by Mississippi, it was hoped shell sales during the year would permit the payment of an additional $1,500. The 1962 Mississippi Legislature authorized the Mississippi Marine Conservation Commission to pay up to $2,500 per annum in dues, it was stated.

A 1962-63 budget suggested by the Commission officers was distributed. It was explained that the suggested operating expenditures were in line with the actual cost for operating the Commission during fiscal 1961-62; the total cost being $18,503.28 for 1962-63 against $18,354.16 last year.

Commission Chairman Young requested the Director to leave the room while the suggested budget was discussed. Following is copy of letter written by Commissioner Young to the Director under date of October 25, 1962 (additions by the Director are underscored).

"You will recall when suggested budget for fiscal year 1962-63 was presented at the executive session on October 19th, at Dauphin Island, Alabama, you were requested to leave the meeting inasmuch as a matter affecting you personally would be discussed.

"The budget was considered, item by item, and the following actions were taken in your absence.

1) Mr. Howard Dodgen, of Texas, called attention to two items in the budget -
   a) A raise in salary for the Director, and
   b) Increase in amount allowed for traveling.

"Mr. Dodgen informed the members that he felt a raise was in order at this

time, and that if the travel amount was increased, it would afford the Director an opportunity to visit the States more often.

"Mr. Sheppard, of Florida, moved that the salary of the Director of the Gulf States Marine Fisheries Commission be increased from $9,000.00 to $9,500.00 per year, effective at the beginning of the present fiscal year. This motion was seconded by Mr. Daigle, of Louisiana, and upon roll call by States, all present, in person or by proxy, voted unanimously in favor of the motion. Resolution is herewith second attached.

"Mr. Younger, of Alabama, moved that the salary of the Director's Secretary, Mrs. Emily C. Carr, be increased from $4,000.00 to $4,200.00 per year. A roll call by States showed all voting in favor of the motion. Resolution is herewith second attached.

"A thorough discussion was held on the matter of travel and Mr. Dodgen, of Texas, moved that this be increased from $1,400 to $1,900 per year, or an additional $500.00 to be used by the Director for travel when authorized to do so by the Commission Chairman. All States were polled and there was a unanimous vote of all those present in favor of this motion.

"Mr. Cory, of Texas, commented that Commission members would be more fully informed if a regular mailing of information and printed materials would reach Commission members from time to time between and before meetings.

"Mr. Cory moved that stationery, printing and supplies item in the budget be increased to $675.00 and the postage item to $350.00. This was seconded by Mr. Sheppard, of Florida, and upon roll call by States, was unanimously adopted.

"Mr. Younger, of Alabama, moved that payroll taxes item be increased to $340.00 to cover additional taxes required in above salary increases. This motion was seconded by Mr. Daigle, of Louisiana, and upon roll call by the States, a unanimous vote by those present in favor was recorded.

"Mr. Sheppard, of Florida then moved adoption of the complete budget with the above changes, amounting to a total of $20,200.00 and his motion was seconded by Mr. Younger, and upon roll call by States, a favorable and unanimous vote was recorded. Items of travel; stationery, printing and supplies; postage; payroll taxes; as well as the two Resolutions, are reflected in the budget for 1962-63 which appears on the following page.

"At this point, you returned to the meeting and you have a record of other proceedings of the day."

Budget for Fiscal Year 1962-63

	As suggested	As approved
Salaries	$ 13,000.00	$ 13,700.00
Publications	650.00	650.00
Travel	1,400.00	1,900.00
Office rent	1,080.00	1,080.00
Stationery, printing and supplies	375.00	675.00
Telephone and telegraph	475.00	475.00
Postage	175.00	350.00
Electricity	95.00	95.00
Equipment maintenance	70.00	70.00
Accounting	250.00	250.00
Insurance	250.00	250.00
Meeting expense	250.00	250.00
Payroll taxes	318.28	340.00
Depreciation	40.00	40.00
Sundry	75.00	75.00
	$ 18,503.28	$ 20,200.00

Approved by the Gulf States Marine
Fisheries Commission, October 19, 1962

Following adoption of the budget, the matter of increasing the volume of reading materials for the Commissioners was discussed with the Director. It was pointed out that more information was needed regarding activities of the member state agencies in all fields including any changes in ordinances, regulations or rules affecting the fisheries. Instructions were given to secure the reports on a monthly basis, consolidate same and promptly supply copies to the Commissioners.

Commissioner Cory moved that future regular meetings of the Commission be scheduled for two days instead of the present scheduling of 1½ days; and that the Commissioners meet in Executive Session with breakfast at 7:30 a.m. on the second morning so that the Commissioners may join the Scientists' Session, which will be scheduled to begin at 9:30 a.m. of the second meeting morning. Commissioner Daigle seconded. On vote the motion past.

Mr. Ingle explained the efforts being made by the Florida State Board of Conservation in interest of the mullet industry, which industry, he said, now refers to its product as "Lisa". The Commissioners expressed considerable interest in the assist to industry through this promotional endeavor and extended their good wishes for success.

Following consideration of a meeting site and headquarters for the October 17-18, 1963 meeting, Biloxi, Mississippi, and the Broadwater Beach Hotel of that city were the selections.

The Director was instructed to attend the Washington, D. C.,meeting of interstate agencies scheduled for November 14-16.

The Director was instructed to prepare a number of Resolutions and forward same with appropriate letters of transmittal to the following: Chairman L. D. Young, Jr.; each of the program's participants; Mr. James McPhillips; and the Mobile Area Chamber of Commerce. These Resolutions are herewith attached in the order listed above.

Commissioner Younger nominated Commissioner Caffey for the office of Commission Chairman for the year 1962-63. Commissioner Dodgen seconded. No further nominations were presented and Commissioner Caffey was acclaimed Commission Chairman for the coming year.

Commissioner Dodgen nominated Commissioner Richard H. Cory for the office of Commission Vice-Chairman for the year 1962-63. Commissioner Daigle seconded. No further nominations were presented and Commissioner Cory was acclaimed Commission Vice-Chairman for the coming year.

No further business remained to be transacted and the session was adjourned at 11:10 a.m.

Prepared by: W. Dudley Gunn
Director

RESOLUTION

BE IT RESOLVED that the salary of the Director of the Gulf States Marine Fisheries Commission be increased from $9,000.00 to $9,500.00 per year, effective at the beginning of the present fiscal year.

* * * * * *

The foregoing Resolution was adopted by the Gulf States Marine Fisheries Commission, October 19, 1962, at a regular Commission meeting held at the Holiday Inn, Dauphin Island, Alabama

W. D. Gunn, Director
Gulf States Marine Fisheries Commission

RESOLUTION

BE IT RESOLVED that the salary of the Office Secretary of the Gulf States Marine Fisheries Commission be increased from $4,000.00 to $4,200.00 per year, effective at the beginning of the present fiscal year.

* * * * * *

The foregoing Resolution was adopted by the Gulf States Marine Fisheries Commission, October 19, 1962, at a regular Commission meeting held at the Holiday Inn, Dauphin Island, Alabama.

W. D. Gunn, Director
Gulf States Marine Fisheries Commission

RESOLUTION

WHEREAS, L. D. Young, Jr., ex-officio member of the State of Louisiana Delegation to the Gulf States Marine Fisheries Commission, has served as Chairman of the Commission for the year 1961-62, and

WHEREAS, he has not only discharged the duties of such office in full accord with the directives of the Commission, but has additionally served the member states in many ways, including his efforts in the Congress which have contributed much to a full implementation of the Federal Shrimp Biological Research Program, and a five-state expansion of the Tri-State Governors' Committee on Fishery Law Enforcement, during his term of office; now, therefore

BE IT RESOLVED that the Gulf States Marine Fisheries Commission express to L. D. Young, Jr., its most sincere gratitude for the excellent leadership he has most generously provided the Commission during his administration and during which period the Compact objectives have so materially advanced.

* * * * * *

The foregoing Resolution was adopted by the Gulf States Marine Fisheries Commission, October 19, 1962, at a regular Commission meeting held at the Holiday Inn, Dauphin Island, Alabama.

W. D. Gunn, Director
Gulf States Marine Fisheries Commission

RESOLUTION

RESOLVED that the Gulf States Marine Fisheries Commission express to those who participated on the program of the Thirteenth Annual Meeting, its most sincere appreciation for their contribution toward what is considered to have been one of the most interesting and productive meetings of its history.

* * * * * *

The foregoing Resolution was adopted by the Gulf States Marine Fisheries Commission, October 19, 1962, at a regular Commission meeting held at the Holiday Inn, Dauphin Island, Alabama.

W. D. Gunn, Director
Gulf States Marine Fisheries Commission

RESOLUTION

RESOLVED that the Commissioners of the Gulf States Marine Fisheries Commission express to Honorable James McPhillips their most sincere appreciation for the very lovely dinner party tendered them and delegates on the evening of October 17 in the Black Augus Room of Bailey's Restaurant.

* * * * * *

The foregoing Resolution was adopted by the Gulf States Marine Fisheries Commission, October 19, 1962, at a regular Commission meeting held at the Holiday Inn, Dauphin Island, Alabama.

W. D. Gunn, Director
Gulf States Marine Fisheries Commission

RESOLUTION

RESOLVED that the Gulf States Marine Fisheries Commission express to Honorable M. E. Weatherby, Jr., President, Mobile Area Chamber of Commerce, its most sincere appreciation for the kind group invitation to the lovely luncheon given in honor of Governor Patterson at the Isle Dauphine Club on October 18th, and for the assistance rendered in the registration of delegates to the Thirteenth Annual Meeting of the Commission.

* * * * * *

The foregoing Resolution was adopted by the Gulf States Marine Fisheries Commission, October 19, 1962, at a regular Commission meeting held at the Holiday Inn, Dauphin Island, Alabama.

W. D. Gunn, Director
Gulf States Marine Fisheries Commission

RESOLUTION

RESOLVED that the Gulf States Marine Fisheries Commission express to Honorable William C. Younger, Director, Alabama Department of Conservation and to members of the staffs of the Divisions of Seafoods, and Fish and Game, its most sincere appreciation for the very cordial hospitality and the many courtesies extended during the course of the Commission meeting at Dauphin Island, Alabama, October 18-19, 1962.

* * * * * *

The foregoing Resolution was adopted by the Gulf States Marine Fisheries Commission, October 19, 1962, at a regular Commission meeting held at the Holiday Inn, Dauphin Island, Alabama.

W. D. Gunn

W. D. Gunn, Director
Gulf States Marine Fisheries Commission

PROGRAM

GULF STATES MARINE FISHERIES COMMISSION

Commissioners

Order of listing: Administrator, Legislator, Governor's Appointee

Alabama

William C. Younger

Will G. Caffey, Jr. (Vice-Chairman)

Max Lawrenz, Sr.

Florida

W. Randolph Hodges

Walter O. Sheppard

[illegible]

Louisiana

[illegible]

Mississippi

[illegible]

Texas

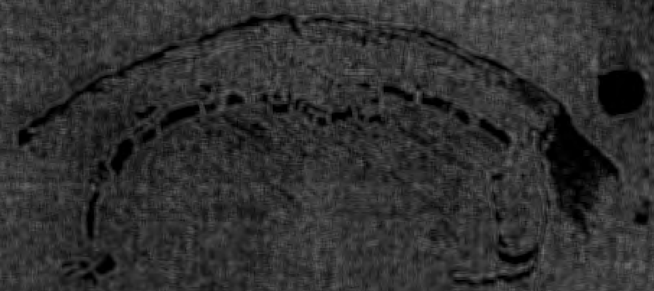
Howard D. Dodgen

[illegible]

★

W. Dudley Gunn

[illegible]



GULF STATES MARINE FISHERIES COMMISSION

Galveston, Texas

[illegible]

March 15-16, 1962

★

Pre-meeting session

of

[illegible] Technical Coordinating Committee

[illegible]

★

[illegible]

Gulf States Marine Fisheries Commission

312 Audubon Building

New Orleans 16, Louisiana

Gulf States Marine Fisheries Commission

M I N U T E S

REGULAR MEETING

THE

JACK TAR

GALVESTON - TEXAS

MARCH 15-16, 1962

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

M I N U T E S

REGULAR MEETING, MARCH 15-16, 1962
Jack Tar Hotel
Galveston, Texas

OFFICIAL ATTENDANCE OF COMMISSIONERS

	PRESENT	ABSENT
ALABAMA	William C. Younger Will G. Caffey, Jr. Max K. Lawrenz	
FLORIDA	Bruce J. Scott Walter O. Sheppard	W. Randolph Hodges
LOUISIANA	L. D. Young, Jr. Alvin Dyson	Sidney A. Bourg, Sr.
MISSISSIPPI	George A. Brumfield Hermes Gautier	Stanford E. Morse, Jr.
TEXAS		Howard D. Dodgen Richard H. Cory
PROXIES	Robert M. Ingle Hermes Gautier Howard T. Lee Howard T. Lee J. R. Singleton	(For W. Randolph Hodges) (For Stanford E. Morse, Jr.) (For Howard D. Dodgen, 3/15/62) (For Richard H. Cory, 3/16/62) (For Howard D. Dodgen, 3/16/62)
STAFF	W. Dudley Gunn	

OTHER STATE FISHERIES REPRESENTATIVES PRESENT

George W. Allen, Kenneth C. Corkum, Wm. J. Demoran, R. Z. Finchum, T. B. Ford, H. V. Gibson, Robert P. Hofstetter, Terrance R. Leary, Jack C. Mallory, R. Marek, Jr., James N. McConnell, James H. Pratt, Alfred L. Prechac, Jr., Edward J. Pullen, Lyle S. St. Amant, A. R. Schwartz, Ernest G. Simmons, Max W. Summers, Marion Toole.

FEDERAL GOVERNMENT REPRESENTATIVES PRESENT

U. S. BUREAU OF COMMERCIAL FISHERIES: E. L. Arnold, Jr., H. E. Crowther, Anthony Inglis, J. Bruce Kinsey, Joseph H. Kutkuhn, Norman L. Pease, George A. Rounsefell, Geo. W. Snow, James E. Sykes, Seton H. Thompson.

U. S. BUREAU OF SPORT FISHERIES AND WILDLIFE: Albert H. Swartz.

U. S. BUREAU OF RECLAMATION: Harry P. Burleigh.

REPRESENTATIVES OF INDUSTRY PRESENT

D. A. Caravagih, J. J. Lyman, Harry J. McGinnis, Kenneth R. McLain, John Mehos, Joe Grasso, Jr., O. F. Roeyer, William F. Schaaf, Gardner Serrill. J. I. Thompson O. P. Trice.

REPRESENTATIVES OF COMMERCIAL AND SPORT FISHING ASSOCIATIONS PRESENT

Bill Apple, F. H. Farrar, Henry J. LeBlanc, M. A. Massa, G. W. McNeir, Cecil Reid, E. T. Simton, M. T. Waddell.

UNIVERSITY LABORATORY REPRESENTATIVES PRESENT

Albert Collier, Gordon Gunter, Albert C. Jones, Sammy M. Ray.

CLERGY ..... TRADE JOURNAL ..... NEWSPAPERS PRESENT

Reverend John T. McCrea ..... Bill Sarratt ..... A. C. Becker, Hard Boughton.

* * * * * *

PRE-MEETING SESSIONS, MARCH 14, 1962

Shrimp Committee, 6:30 PM, Jack Tar Oak Room

Governors' Tri-State Seafood Committee, 6:30 PM, Jack Tar Cut'n Shuffle Room

Estuarine Committee, 7:30 PM, Jack Tar Oak Room

GENERAL SESSION, MARCH 15, 1962

Commission Chairman Young called the meeting to order at 9:45 AM. Reverend John T. McCrea, Pastor, First Presbyterian Church of Galveston rendered the invocation.

Senator A. R. Schwartz of Galveston was introduced for the purpose of welcoming the Commission to the State of Texas. Included in his welcoming address were the highlights of more recent fishery enactments of the Texas Legislature. Senator Schwartz was high in his praise of the research programs being conducted by the Texas Game and Fish Commission. He congratulated the Gulf States Marine Fisheries Commission and its State, Federal and other cooperators for the manner in which the group is attempting to attain the objectives set out in the Compact.

The Chairman next introduced the President of the Sportsmen's Clubs of Texas, Henry J. LeBlanc, Sr. Copy of the address by Mr. LeBlanc is first attached to these Minutes

Chairman Young introduced Mr. Bill Apple of Arkansas who with Mr. LeBlanc had just returned from the Denver convention of the National Wildlife Federation. Mr. Apple stated that he had fished in most waters from the Rio Grande to Key West over the years. In more recent years, he said sub-marginal areas have been decreasing at an increasing rate due to real estate, industrial and other development. He called for a joint effort by the NWF and the GSMFC to inform the public of the continued loss of nursery areas for fish and shellfish through the encroachment of civilization.

In introducing the next speaker, the Chairman referred to a former address by the speaker, Commissioner Harry P. Burleigh, U. S. Study Commission - Texas, in which the GSMFC was informed of the objectives of his group. Mr. Burleigh stated that the Study Commission was in the process of rendering its final report and that it was about the recommendations of the group which he chose to speak. The speaker invited questions at any time during the progress of the report. Numerous questions were asked, particularly during that part of the report where illustrative maps by areas were presented. Copy of Mr. Burleigh's prepared paper is second attached to these Minutes.

The Chairman announced a fifteen minute recess during which time the Commissioners hosted the delegates to coffee.

Returning from recess, Chairman Young announced that the GSMFC Special Committee On Shrimp Biological Research had prepared a report as it had been requested and that the committee would present the report and answer questions pertaining thereto. Committee Chairman Ingle of Florida, Committee Secretary St. Amant of Louisiana, and Committeemen Demoran of Mississippi, Kutkuhn of the Bureau of Commercial Fisheries, Leary of Texas and Mallory of Alabama, were introduced for the panel presentation. Mr. Ingle briefly summarized the purposes and accomplishments of the committee at its Miami Beach (November) and two Galveston (January and March) meetings, and panel members gave more detailed reports on the several programs now being progressed by the States. Dr. Kutkuhn in speaking referred to graphs which were

based upon data accumulated by the Federal biologists.

Included in the Report, and read to the group, were nine recommendations proposed by the committee. These nine recommendations follow:

1. The most compelling work remains the population dynamics requested by resolution in Clearwater. Since the full $500,000 was not made available, the tagging and recovery should be done first, with the other studies outlined in Research Prospectus Number One undertaken when supplementary funds become available.

2. The types of studies previously undertaken by Young on anatomy and Stein on histochemistry should be continued and should embrace all commercially valuable species. All presently existing data should be published.

3. Work on the Tortugas grounds being done by the University of Miami and sponsored by the Fish and Wildlife Service should be continued into the next phase.

4. Plans should be made to continue in as many areas as possible the present sampling for larvae and post-larvae. These samplings should include temperature and salinity readings. Two valuable outcomes may be expected from this. Inasmuch as the many habitats available over the Gulf include wide variations in ecological conditions, the empirical observation of shrimp under these different conditions will provide understanding of critical requirements for vital processes in the several commercial species and, with this knowledge, prediction of abundance can become a routine function of biological staffs.

5. As time and money permits, investigation should be made into the more delicate physiological processes of the animals. A greater understanding of these mechanisms will help to refine and make more accurate the two benefits listed in (4), above

6. Due to the expanding scope and accellerated pace of shrimp research, close coordination becomes more and more valuable and necessary. To meet this need, the shrimp committee should remain active.

7. Additional suggestions are included in the text of this report.

8. Because the background information is more extensively developed for the Tortugas fishery, the most expeditious location for the studies recommended in (1), above, would be in that area.

9. Any funds not expended on marking and recovery experiments designed for mortality study will be used for dock-side sampling as an adjunct to the statistical program in all five states.

The Chairman announced that the Galveston Shrimp Association would favor the group with a party beginning at 6:30 PM in the Jack Tar Charcoal Galley.

Dr. Rounsefell spoke of the planned field trip to the Galveston Bureau of Commercial Fisheries Laboratory and introduced those program leaders who were to conduct the workshop. Presented were: Messrs. W. Bruce Kinsey, James Regan,

Anthony Inglis, Edward Chin, Kenneth Marvin and David Aldrich.

The morning session was adjourned at 12:15 PM with announcement by the Chairman that the program would be resumed at 2:00 PM at the Galveston BCF Laboratory.

Upon reaching the laboratory site, Fort Crockett, the group was divided into several parties. Proceeding in several directions, the parties viewed the routine laboratory procedures of each of the several programs: shrimp, industrial fish, estuary, physiology and behavior, and red tide. The chemistry laboratory functions were detailed and the numerous experiments on shrimp and fish made possible by the sea-water system were observed. The tour was completed at 4:00 PM.

Friday (March 16, 1962)

The Commission Executive Session began at 8:30 AM with the serving of breakfast in the Jack Tar Pompano Room. The Scientists' Round Table began at 9:30 AM in the Jack Tar Oak Room, with Dr. Ted B. Ford presiding for Mr. Howard T. Lee because of the latter having been designated a Commissioner proxy.

At the Executive Session, Mr. Albert H. Swartz, Bureau of Sport Fisheries and Wildlife, reported on the progress of the Marine Game Fish Research Program. Dr. Gordon Gunter suggested that, should the Bureau decide to establish a research laboratory on the Gulf as had been done on the Atlantic and Pacific, the vast nursery areas of the Mississippi River should be taken into consideration in the selection of a site.

On call by Chairman Young for any matters the guests wished to present for Commission consideration, Mr. John Mehos of industry asked for support of the Kilgore and Gruening bills in the Congress. Mr. Ernest Mitts, Secretary-Treasurer, Atlantic States Marine Fisheries Commission, who had come to Galveston to seek support of the Gruening bill (S. 1230) and similar legislation, informed the Commission that the Atlantic Commission had approved the bill in principle. A general discussion of the proposed legislation, designed to provide additional Federal assistance to the States for fishery research programs and fisheries rehabilitation and development projects, followed.

Guests of the Commission attended the session until the scientists' meeting was scheduled to start, 9:30 AM.

The Executive Session was adjourned at 11:15 AM and the Commissioners joined the group in the Oak Room for a final Grand Session.

The Chairman called upon Dr. Ford for reports on the Estuarine Technical Coordinating Committee session of March 14 (A. below) and the Scientists' Round Table (B. Below) just adjourned.

A. The committee met briefly following the special committee on shrimp biological research to determine whether the publication of the estuarine atlas was feasible. Dr. George Rounsefell, who had volunteered to assume the responsibility

of standardizing and preparing the charts for publication, recognized several problems after some preliminary work on the project. These were as follows:

1. There were a large number of charts, which would have to be re-drawn, for the Gulf coast.

2. Reduction in size for publication would result in loss of detail.

3. There were differences in the relative importance of symbols among the various states.

4. Each of the maps should be further supported by a text or running account which provides additional information not conveniently shown on the charts.

After discussion of the matter in which potential public relation values for the charts were recognized as applicable for each of the respective states, and previous efforts would not be completely ineffective, the following motion was offered by Dr. Gordon Gunter: "Resolved that the responsibility for publishing the charts previously prepared by each of the states be returned to and left with the states since each state was more familiar with the types of requests for information which the reproduction and distribution of these charts could best serve." Motion seconded by Mr. Robert Ingle and passed unanimously.

It was then agreed that each state could easily furnish copies of other states if they were desired.

B. Three primary topics were discussed during this period as follows:

1. Mr. Marion Toole, D-J Coordinator, Texas Game and Fish Commission, reported on the "Experimental Stocking of Marine Fish Species in Saline Waters of Western Texas." Copies of the job completion report were available for those interested. The abstract of the report is as follows:

> Marine species of fish totalling 1,723 individuals have been introduced into saline waters in western Texas. Except for a few yearling fish introduced into the Pecos River, fingerling size fish were used. Most of these smaller fish were released in Red Bluff Reservoir and Imperial Reservoir. Redfish (Sciaenops ocellatus), Atlantic croaker (Micropogon undulatus), spotted seatrout (Cynoscion nebulosus) and southern flounder (Paralichthys lethostigmus) were the species introduced. Reconnaissance data indicate survival of the four species to an undetermined degree, and also an exceptionally high rate of growth for all of the fishes recaptured. No data have been acquired from the releases in the Pecos River because of adverse conditions. Data on biochemical and other ecological factors have been collected for correlations with marine counterpart conditions. It is concluded that this work should be continued.

2. Dr. Gordon Gunter discussed previously described growth rates of white shrimp in bay or inside waters, as they might differ from growth rates determined for pink shrimp from the Florida Bay and Sanibel experiments as presented

by Dr. Joseph Kutkuhn. These differences were about one inch per month for inside waters, while that for the outside waters (Florida Bay being more comparable to Gulf of Mexico than inside waters as suggested by Dr. Gunter) was observed in a recent experiment to be about one-half inch per month. Proposed follow-up experiments in the Florida Bay and Sanibel areas should contribute more data and be of considerable interest.

3. Dr. Lyle St. Amant based questions about the sampling of post-larvel shrimp and the variations in numbers per sample between the coastal areas of Louisiana and Texas as found by the two States and the Bureau. These differences in sampling data between the three groups' respective areas of concentrated activities were discussed. Comparable sampling techniques should provide a good basis for comparative studies of shrimp growth, movement and populations.

The following notes from the Commission Executive Session were given by the Director:

1. Endorsed in principle the Gruening Bill (S. 1230) and the Rivers Bill (H. R. 5301).

2. Approved in principle broadening of the Marine Game Fish Research Program of the Bureau of Sport Fisheries and Wildlife to include the Gulf States.

3. Recommended to the Governors and Legislatures of the Gulf States that pollution laws be broadened and strengthened to cope with this serious problem.

4. Tri-State (Alabama -Louisiana-Mississippi) Governors Seafood Committee report received and its responsibilities assumed by the GSMFC subject to the approval of the Governors of those states.

5. Approved the February 1962 report of the GSMFC Shrimp Biological Research Committee including its list of nine (9) recommendations.

6. Expressed appreciation to Congressional Delegates of the Gulf States for past support which has led to fuller implementation of the Federal Biological Research Program on shrimp in the Gulf of Mexico and solicited further cooperation for a fully implemented program through the addition of $325,000 to the Interior F/Y 1963 budget.

7. Requested Fish and Wildlife Service to contract for the gaining of information helpful to a better understanding of the oyster resource in a study of carbohydrate-like substances in sea water.

With no response to a call for the presentation of other matters, Chairman Young expressed the deep appreciation of the Commission for the excellent attendance and interest in evidence at the meeting, and after inviting all delegates to the 13th Annual Meeting (Dauphin Island, Alabama, October 18-19, 1962) adjourned the meeting at 11:55 AM.

Prepared by: W. Dudley Gunn
Director

EXECUTIVE SESSION, GALVESTON, TEXAS, MARCH 16, 1962

Following breakfast and the pre-executive session, which is detailed on page 5 of these meeting Minutes, Chairman Young called upon Director Gunn.

Minutes of the October 1961 meeting was approved without reading in the form mailed to the Commissioners on November 21 on motion of Commissioner Younger, and seconded by Mr. Lee, proxy for Commissioner Cory.

The Director reported a February end Commission balance of $6,896.89 ($6,865.37 balance in bank and $31.52 petty cash). It was reported that a new typewriter had been purchased but that the furniture allowance provided for in the 1961-62 budget had not been used.

A conversation with Commissioner Morse was reported in which he stated that the Commission's request for an increase in the Mississippi membership dues of from $1,000 to $3,500 per annum would be presented to the current legislature as part of a bill in which several requests of the Mississippi Marine Conservation Commission are combined. Commissioners Brumfield and Gautier pledged support of the requested membership dues.

The matter of selecting a site in Florida for the March 21-22, 1963 meeting was left to Commissioners Scott and Sheppard with Fort Myers being prominently mentioned following a decision of not meeting for a fourth consecutive time in the Tampa Bay area.

Following a discussion of S. 1230 (Gruening) and H. P. 5301 (Rivers) Commissioner Sheppard moved for the adoption of a resolution to agree in principle with the two bills which would make Federal funds available to the states for fishery research and related purposes. Commissioner Younger seconded. On vote, the resolution was adopted with Texas voting no and the other four states voting yes. Copy of resolution is herewith first attached.

The Marine Game Fish Research Program was discussed and Commissioner Scott moved that the Commission approve in principle a broadening of the program to include the Gulf States. Commissioner Caffey seconded. Upon vote the resolution was adopted. Copy of resolution is herewith second attached.

The subject of pollution was next considered. Commissioner Caffey proposed that a resolution be adopted in which the Commission recognizes the seriousness of the problem and urges the Governors, Legislatures and State Health Departments to implement programs and legislation to curb pollution of the waters. Commissioner Dyson seconded. Upon vote the resolution was adopted, copy of which is herewith third attached.

Mr. Ingle, proxy for Commissioner Hodges, moved for approval of the report of the shrimp committee, as reported at the March 15 session, together with the nine recommendations of the committee contained therein. Mr. Lee seconded. Upon vote the motion passed. This resolution in copy is herewith fourth attached.

A discussion of the February 1962 Washington trip of the Commission group in interest of obtaining additional funds for shrimp biological research was discussed. It was brought out that other funds were being sought for Gulf gear and exploratory work and that the Commission's request should be distinguished from the other request of a near like amount. Mr. Ingle proposed such a resolution. Commissioner Dyson seconded. Upon vote the resolution was adopted and copy is herewith fifth attached.

Mr. Ingle explained the desirability of having more information on the role played by sea water carbohydrate-like compounds in the physical well being of the oyster and proposed that the Commission request the Fish and Wildlife Service to consummate a contract with the Texas A&M College Galveston Marine Laboratory, as submitted by Mr. Albert Collier and Dr. Sammy Ray, for a study of the subject character. Commissioner Dyson seconded. Upon vote the resolution was adopted. Copy is herewith sixth attached.

Commissioner Younger reported on the March 14 meeting of the Governors Tri-State (Alabama-Louisiana-Mississippi) Seafoods Committee. He said that the committee, with the approval of the three Governors, desired to request that the Commission assume the functions of the committee. Commissioner Younger presented a resolution along the above lines, which also provides for a standing committee on reciprocal agreements and related fishery problems, composed of one person from each member state who is connected with enforcement activities. Commissioner Brumfield seconded. Upon vote the resolution was adopted, copy of which is herewith seventh attached.

No further business remained to be transacted and the Chairman adjourned the session at 11:15 AM for the final General Session in the Oak Room.

Prepared by: W. Dudley Gunn
Director

RESOLUTION

BE IT RESOLVED that the Gulf States Marine Fisheries Commission approves in principle the broadening of the Marine Game Fish Research Program of the U. S. Fish and Wildlife Service to include the Gulf States.

* * * * * *

The above resolution was adopted by the Gulf States Marine Fisheries Commission, March 16, 1962, at a regular Commission meeting held at the Jack Tar Hotel, Galveston, Texas.

W. D. Gunn, Director
Gulf States Marine Fisheries Commission

RESOLUTION

BE IT RESOLVED that the Gulf States Marine Fisheries Commission recognizes pollution of the waters of the Gulf States as a serious problem and urges the five member states of the compact to implement programs and legislation to curb pollution of the waters.

BE IT FURTHER RESOLVED that a copy of this resolution be addressed to the Governors, Legislatures and Departments of Health of the several member states.

* * * * * *

The foregoing Resolution was adopted by the Gulf States Marine Fisheries Commission, March 16, 1962, at a regular Commission meeting held at the Jack Tar Hotel, Galveston, Texas.

W. D. Gunn, Director
Gulf States Marine Fisheries Commission

RESOLUTION

BE IT RESOLVED that the Gulf States Marine Fisheries Commission approves the Report of its Committee on Shrimp Biological Research, which report is titled "Present Research On Shrimp In The Gulf of Mexico" (February 1962) and contains the following nine (9) recommendations:

1. The most compelling work remains the population dynamics requested by resolution in Clearwater. Since the full $500,000 was not made available, the tagging and recovery should be done first, with the other studies outlined in Research Prospectus Number One undertaken when supplementary funds become available.
2. The types of studies previously undertaken by Young on anatomy and Stein on histochemistry should be continued and should embrace all commercially valuable species. All presently existing data whould be published.
3. Work on the Tortugas grounds being done by the University of Miami and sponsored by the Fish and Wildlife Service should be continued into the next phase.
4. Plans should be made to continue in as many areas as possible the present sampling for larvae and post-larvae. These samplings should include temperature and salinity readings. Two valuable outcomes may be expected from this. Inasmuch as the many habitats available over the Gulf include wide variations in ecological conditions, the empirical observation of shrimp under these different conditions will provide understanding of

critical requirements for vital processes in the several commercial species and, with this knowledge, prediction of abundance can become a routine function of biological staffs.

5. As time and money permits, investigation should be made into the more delicate physiological processes of the animals. A greater understanding of these mechanisms will help to refine and make more accurate the two benefits listed in (4), above.

6. Due to the expanding scope and accellerated pace of shrimp research, close coordination becomes more and more valuable and necessary. To meet this need, the shrimp committee should remain active.

7. Additionsl suggestions are included in the text of this report.

8. Because the background information is more extensively developed for the Tortugas fishery, the most expeditious location for the studies recommended in (1), above, would be in that area.

9. Any funds not expended on marking and recovery experiments designed for mortality study will be used for dock-side sampling as an adjunct to the statistical program in all five states.

* * * * * *

The foregoing Resolution was adopted by the Gulf States Marine Fisheries Commission, March 16, 1962, at a regular Commission meeting held at the Jack Tar Hotel, Galveston, Texas.

W. D. Gunn, Director
Gulf States Marine Fisheries Commission

RESOLUTION

BE IT RESOLVED that the Gulf States Marine Fisheries Commission go on record as favoring in principle S. 1230 and H. R. 5301 (87th Congress, 1st Session), each of which bills is designed to provide additional Federal assistance to the States for fishery research programs and fisheries rehabilitation and development projects.

* * * * * *

The foregoing Resolution was adopted by the Gulf States Marine Fisheries Commission, March 16, 1962, at a regular Commission meeting held at the Jack Tar Hotel, Galveston, Texas.

W. D. Gunn
Gulf States Marine Fisheries Commission

RESOLUTION

RESOLVED that the Gulf States Marine Fisheries Commission express its appreciation to the Congressional Delegates of the Gulf States for their fine support in the past which has led to a fuller implementation of the Federal Biological Research Program On Shrimp in the Gulf of Mexico.

BE IT FURTHER RESOLVED that the Congressional Delegates be advised that full implementation of such program would require an addition of $325,000 to the Federal Year 1963 budget of the Interior Department, and that their further cooperation be solicited.

* * * * * *

The foregoing Resolution was adopted by the Gulf States Marine Fisheries Commission, March 16, 1962, at a regular Commission meeting held at the Jack Tar Hotel, Galveston, Texas.

W. D. Gunn, Director
Gulf States Marine Fisheries Commission

RESOLUTION

WHEREAS, previous studies on the physiological effects of certain carbohydrate-like compounds in sea water have demonstrated the vital role these substances play in oyster vigor: and

WHEREAS, the decline of the northern oyster fishery has resulted in a greater growth and activity in the industry of the Gulf of Mexico; and

WHEREAS, the aforementioned substances are particularly important in warmer waters and are therefore intimately associated with the development of our oyster industry.

NOW, THEREFORE, BE IT RESOLVED that the Fish and Wildlife Service be urged to consider favorably the proposal from Mr. Albert Collier and Dr. Sammy Ray of the Galveston Marine Laboratory, A. & M. College of Texas, Galveston, Texas; such proposal requesting money for support of studies on carbohydrate-like substances in sea water.

* * * * * *

The foregoing Resolution was adopted by the Gulf States Marine Fisheries Commission, March 16, 1962, at a regular Commission meeting held at the Jack Tar Hotel, Galveston, Texas.

W. D. Gunn, Director
Gulf States Marine Fisheries Commission

RESOLUTION

WHEREAS, Their Excellencies John Patterson, Jimmy Davis, and Ross Barnett, the respective Governors of Alabama, Louisiana, and Mississippi have heretofore appointed a Tri-States Governors Committee on Seafoods to study proposed reciprocal agreements and related seafoods problems among the respective states, and

WHEREAS, said Committee is composed of three representatives from each state namely: Messrs. George Allen, Robert Bradley, and William C. Younger, of Alabama; Messrs E. R. McDonald, L. D. Young, Jr., and James N. McConnell, of Louisiana; and Messrs. Bill Simpson, George Brumfield, and George Williams, of Mississippi; with William C. Younger as Chairman, and

WHEREAS, said Committee met three times during the calendar year 1961 and one time during this meeting of the Gulf States Marine Fisheries Commission, and

WHEREAS, this Committee has made much progress in the solution of the mutual seafoods problems of the respective states, and

WHEREAS, said Committee at its regular meeting on March 14, 1962, in Galveston, Texas, adopted a resolution recommending to the respective Governors named above that the responsibilities, duties, and functions of the Governors Tri-States Seafood Committee be transferred to the Gulf States Marine Fisheries Commission due to the parallel functions and overlapping responsibilities

of the two groups and that said Committee be dissolved upon the assumption of its duties by the Commission, and

WHEREAS, the functions of the Committee are deemed to be within the pursue and authority of the Commission and should be carried on by the Commission so as to include all member states of the Compact.

NOW, THEREFORE, BE IT RESOLVED that the responsibilities, duties, and functions of the Governors Tri=States Seafoods Committee be assumed by the Gulf States Marine Fisheries Commission upon the approval of the said Governors of the committee's recommendations, and

BE IT FURTHER RESOLVED that a standing committee on reciprocal agreements and related marine fisheries problems be established, consisting of one person connected with enforcement activities from each state to be designated by each member state and that said committee members be authorized and encouraged to communicate directly with each other relative to their mutual problems and to meet in executive session as a Committee at each meeting of the Commission.

* * * * * *

The foregoing resolution was adopted by the Gulf States Marine Fisheries Commission March 16, 1962, at a regular Commission meeting at the Jack Tar Hotel in Galveston, Texas.

W. D. Gunn

W. D. Gunn, Director
Gulf States Marine Fisheries Commission

GULF STATES MARINE FISHERIES COMMISSION
Galveston, Texas
Jack Tar Hotel
March 15-16, 1962

"SOME ASPECTS ON THE MARINE RESOURCES OF THE GULF"

Henry J. LeBlanc, Sr., President
Sportsmen's Clubs of Texas, Inc.
Austin, Texas

I appreciate very much the opportunity and priviledge to address this meeting of the Gulf States Marine Fisheries Commission. I have accepted your invitation with enthusiasm because I recognize the present serious plight of our natural marine resources, the damage already done and the dangers that lie ahead.

I also recognize the importance of your commission and the fine work program you have adopted.

As President of the Sportsmen's Clubs of Texas, and a member of the Board of Directors of the National Wildlife Federation, Washington, with whom we are affiliated, I am here to tell you that both of these organizations which are represented here are eager to join other groups such as yours, to find methods to curb the unwarranted and wasteful destruction of our natural resources. We hope that a co-operative program of positive action can be formulated with your commission.

Because many of you are out-of-state it may be wise to tell you that the Sportsmen's Clubs of Texas, better known as "SCOT" is a non-profit, tax exempt, corporation without capital stock, and is made up of one hundred and five member clubs, with a total membership of approximately seventy thousand. We are also affiliated with the National Wildlife Federation, Washington, which has affiliates in every state of the union including Hawaii and Alaska.

On January 31st of this year a comprehensive program to meet the surging outdoor recreation needs of an expanding population was submitted to President Kennedy and the Congress by the Outdoor Recreation Resources Review Commission.

The Commission found that providing for outdoor recreation for the American people has taken on new dimensions of national concern in recent years. It said that 90% of all Americans engage in some form of outdoor recreation and the prospects are that the demand will triple by the end of the century. Certainly, fishing is one of the most popular sports and one which is anticipated to provide pleasure, health, and relaxation for millions of Americans.

At this time I will only comment upon the importance of fishing, both sport and commercial, because our discussion should be narrowed down to the consideration of only this phase of our marine resources.

According to the nation food and agriculture organization the world's catch of seafood was 37.7 million metric tons. One of the smaller nations, Japan, harvested

one-sixth of the total, or 6.2 million metric tons. Of course, we all know that Japan has to depend on the sea for its survival and naturally has built a large fishing fleet and has developed fishing techniques which are very productive.

At the rate of growth of our population who can predict that products of the sea may not be a partial answer to our survival sometime in the near future.

The importance of sport fishing is well known and runs well into billions of dollars for the nation. I have no separate figures on salt water or fresh water sport fishing, so I must combine their importance. Because our population has more leisure time, more money to spend, have boats on wheels and a fine system of highways to travel on, people are no longer penned in their own country or state; the whole nation is their playground. For these reasons the nation's seashore is under terrific pressure. As our wildlife habitats inland are replaced by human habitation, this pressure will increase and the importance of our coast line and the sea will be tremendously enhanced.

The sea may well be considered our last frontier, unless you are planning to live on the moon.

We know so little about the marine resources in the sea that it is appalling. We need an accelerated program of research to learn more about the potentials of the sea and to determine the best methods of conservation, management, and wise use of these resources. If it takes a larger research force, an accelerated program, and larger appropriations, then we say let us in unity get in action and get the job done.

We suggest a two-part program, one a long-range study and the other a program of immediate action based on what our researchers now know and can recommend. There must be a starting point to apply this knowledge, and to quote Secretary of the Interior, Stewart L. Udall, who was the keynote speaker at the annual meeting of the National Wildlife Federation held in Denver from March 9th through the 11th - Quote: "The time is NOW, and 1962 is the year for ACTION. We cannot wait until we have all of the answers to make a start."

Whether, we admit it or not, the concern of the commercial fisherman and the sport fisherman has been too much concentrated on the harvest and too little thought has been given to production and replenishment of the supply by the conservation of habitats, food supply, and water quality for the betterment of our marine creatures.

At one time it was believed that no fishery of the ocean waters could be depleted. We have only to look back at the sardine industry of California to see what can happen to a multi-million dollar industry. It no longer exists as such.

The sardine, like the shrimp and the passenger pigeon, is a creature which moves about in great numbers. These gregarious types depend on their great numbers for survival of the species and it is not necessary to harvest them down to the last individual in order to completely eliminate them. Let us, therefore, concentrate on the production instead of the harvest. If there is no crop, there can be no harvest.

Now let us consider what must be done to conserve the present supply and how it can be augmented.

Research, therefore, is the proper tool we must utilize, but may I suggest that we go ahead of the hounds, so to speak.

While our researchers are recording what has happened in the past let us organize a task force within the framework of the Gulf States Marine Fisheries Commission, the U. S. Fish and Wildlife Service and the National Wildlife Federation and its affiliates that will plan for the future, attend hearings, give advice and suggest plans which will conserve our natural resources before projects are consummated.

We are, by necessity, living in a period when multiple use of all resources must be considered. The thinking that we must choose the one important use for a resource and discard all others is outmoded and undesirable. Through proper management, wise use, and proper planning we can have multiple use in varying degrees.

We all agree, for instance, that we must have CLEAN waters for human consumption, for agriculture, for the cattlemen, for navigation, for industry, but we do not agree that any of these interests have the sole use of this resource, nor do we agree that anyone has an inherent right to pollute our waters or the air we breathe - not even Mr. Khrushchev.

The American public today also wants clean waters for fishing, boating and many other uses.

We all can enjoy multiple uses of our water resources if we can stop pollution and keep our waters clean.

The progress of man has been phenominal but it has been in many cases a progress of unwarranted and wasteful destruction of our natural resources. While the guilty will not admit this, many of us know this to be true and factual.

Most species of fish sought by man, the commercial or sport varities, as well as shrimp and oysters, must have a brackish water environment during a portion of their lives. To destroy this environment by fills, to alter it by dikes, to change the chemical composition by altering either the fresh water or the oceanic gulf water is to destroy an essential in the life chain.

These species are disappearing gradually because of the encroachment of human habitation. We are filling in our marshes, swamps, and our grassy shorelines to make attractive water front real estate, dredging to allow small boat navigation where we have not had it. We have constructed canals and channels, laid pipelines, and closed off bays, and then diverted the drainage from watersheds into channels to keep them open for navigation, causing the many small natural passes from the gulf to inland bays to cease to flow and disappear. These have been the inlets and outlets used by many species of fish and shrimp to reach the spawning and nursery grounds provided by our bays, lagoons, and other bodies of brackish waters, and as an escape way to the Gulf during freezes, periods of pollution, or other conditions which make their existence impossible in inland waters. All of these so called man-made improvements have drastically changed, or even eliminated the original favorable environments.

Certainly, we want all the beneficial man-made projects that provide an improvement in our living standards, but not at the expense of our natural resources when there is a way to conserve both.Research, co-operative and unselfish efforts, proper planning that considers all values, good management and wise use, is the only solution of our present day problems confronting our marine resources. We must alter, reduce, or remove those forces and activities which have had such disasterous effect on our marine resources. Our civilization, which has worked so many miracles, can surely protect itself against its own man-made poison.

It will cost money, it will require a great deal of research, it will call for the support of every citizen and every local and state government. It is a job that can be done and must be done.

In summary, may I list the man-induced forees which work against our marine life: increased population and fishing pressure; increased industry; dredging; fills and dikes; oyster reefs removal; silt from overgrazing and the plow; improved fishing gear; poor fishing practices, such as wasteful harvest of young shrimp; but destruction of habitats and pollution in my estimation are the most harmful. Unless we can conquer these two evils, we might as well forget the others for the present.

The natural causes which effect our fisheries are freezes, storms, droughts, and excessive rainfall.

To improve fishing, both commercial and sport, we should consider the building of fish passes from the Gulf to our inland bays to replace those natural passes which have been destroyed by man-made projects. We should build more artificial reefs, determine the best material to use and properly mark them so they can be readily located.

We should improve our bay bottoms, the nursery grounds of our fish and shrimp, by constructing shell pads, and doing the necessary to prevent pollution and siltation.

I have given you a layman's point of view. We look to you and your research staff for the answers, for advice and guidance.

In conclusion may I repeat that we offer you the full cooperation of the Sportsmens's Clubs of Texas and the National Wildlife Federation. We hope that we may act as a liaison between your Commission and the public, believing that only through an informed and aroused public can the job be done. You cannot do the job alone, nor can we, but all of us together can get results. Let us go to work.

(COPY)

GULF STATES MARINE FISHERIES COMMISSION
Galveston, Texas
Jack Tar Hotel
March 15-16, 1962

"U. S. STUDY COMMISSION - TEXAS"

Harry P. Burleigh, Area Engineer
Department of the Interior
Bureau of Reclamation
Austin, Texas

As a member of the U. S. Study Commission-Texas,I am happy to have this opportunity to tell you something about the Commission, its work, and the report which it plans to submit to the President around the first of the year for his consideration and transmission to the Congress.

The Commission is one governmental agency which is working hard to put itself out of business. It was created by the Congress in 1958 to do a special job which greatly needed doing in Texas. That was to formulate a comprehensive, coordinated, and integrated plan for development of the water and related land resources of approximately 62 percent of the State, that portion not covered by interstate compacts or international agreements, for the purpose of achieving maximum benefits to the State and the Nation as well as the areas where the resources exist.

Members of the Commission feel that we have just about completed our assignment to the extent that it can be completed at this time, and to the extent that the continued existence of the Commission is warranted.

The law which established the Commission provides that it shall go out of business within three months after it submits its final report to the President. Although we intend to recommend that a Federal-State interagency committee be appointed to maintain the collaboration between Federal, State, and local interests and agencies which the Commission has been instrumental in bringing about, we expect to cease to exist as a commission within the next few months.

The principal feature of the report which we shall submit to the President and the Congress is a definite plan for development of the land and water resources of the area assigned to us for study. It calls for immediate attention to those developments which will be needed by 1975 and recommends that steps to initiate them be taken promptly because of the time required for detailed planning, financing, and construction.

The long-range plan, of which the 1975 one is a part, covers a period of the next 50 years, to the year 2010. It represents the best judgment of the Commission as to the manner in which the available resources of the area should be developed, on the basis of present knowledge and ability to determine future needs, and we believe it will be helpful to all interests and agencies, both public and private, which are interested in, or concerned with, land and water resource development in Texas.

It is not a rigid plan. Nor is it one likely to be carried out exactly as outlined. It is being offered simply as one way in which the needs which we think are likely to develop can be met. But we do believe that, if a plan were being put into effect at this time to meet anticipated needs fully for the next 50 years, the plan which we are recommending would be preferable.

Since any broad plan necessarily will be implemented progressively over a period of a good many years, we expect the Commission's plan to be modified in the future as changes in conditions, circumstances, and needs indicate. Many of these changes cannot be foreseen now. How closely the Commission's plan is followed will be determined by those who are living and who are responsible for decision-making at the time particular projects or programs are under consideration.

Texas, we all know, is richly endowed with natural resources. Of these resources, its land and its minerals area, beyond question, the most important. They have been the foundation of our growth and progress and will continue to be. But there is another natural resource without which the development and utilization of our other resources would not be possible. It is essential to our lives as well as our economy. That resource is water.

Without water, our accomplishments of the past would not have been possible. And, unless water of suitable quality is available when and where it is needed at a economically feasible cost, our future growth potential cannot be realized. Availability of water will not in itself assure growth. But without water there can be no growth.

As our population, urbanization, and industrialization increase, our total demand for water is skyrocketing. This is true throughout the country. It has been predicted authoritatively that, before the end of the century, water will be in short supply in most sections of the country. It therefore is of the greatest importance that all of our water resources be developed, utilized, and conserved as wisely as human limitations permit.

In formulating its plan, the Commission tried to meet, insofar as is practicable, all essential water needs of the area for the next 50 years. The primary emphasis is on water supply for municipal, industrial, and agricultural purposes, since that is our most acute problem and most vital need, but attention was given to all possible beneficial uses of the area's water resources and to all of the problems related to their development.

The plan was formulated on the basis of available data and technical knowledge and with the view of protecting the land and water resources for future generations without hampering their freedom to make such use of the resources as they might choose.

To carry out its assignment, it was necessary for the Commission to do four things: First, it was necessary to inventory the land and water resources of the area under study and to identify existing problems related to their development and utilization. Next, it was necessary to make sound projections of population and economic growth in order to estimate the demands that probably

will be made upon their resources in the future. Third, it was necessary to compare estimated requirements with available resources, to determine alternative methods for meeting the probable needs, and to analyze the problems involved. And, finally, it was necessary to formulate a plan on the basis of physical and economic feasibility, taking into account anticipated needs, conservation, and realization of maximum benefits.

Anyone familiar with Texas is aware of the wide range of climate within the State and the Study Area and the great variations in rainfall, the source of all our water, with respect to both time and place. Normally, there are areas where rainfall is heavy and others where, on the average, it is very light. Particular areas are subject to frequent and extensive flooding, and periods of prolonged drought may be either general or local. Evaporation losses are high in dry areas and periods. Ground water resources, although large in the aggregate, are unevenly distributed and are not always available in the quantity and quality needed. Even in rapidly developing areas where ground water supplies are large, as in the vicinity of Houston and generally along the eastern gulf coast, there is need for supplemental surface water supplies, especially for industrial purposes. Looking at our water situation as a whole, there are obvious physical limitations on the amount of surface water runoff which can be captured and stored to assure a dependable supply of water for all legitimate purposes on a sustained basis. One of these limitations is in the number of suitable reservoir sited available.

I think you will be interested in knowing that the Commission reached the conclusion that, overall, there will be sufficient water in the Study Area, or available to it from outside sources, to meet needs of the area for at least the next 50 years.

The basic problem is not one of natural deficiency. It is rather one of developing potential supplies in the most beneficial manner and distributing the water where it is needed. In an area as large as Texas and the Study Area, with its particular characteristics, this necessarily will involve a large expenditure of effort and money. As we point out in our report, skill, cooperation, and a will to accomplish are also required to solve our water problems. Our study showed that population is increasing more rapidly in the area studied than in the United States as a whole. Consequently, the increase in demand for water will be more urgent in the Study Area than in many other parts of the country. We have the resources to support a continuation of our present growth indefinitely. We have the water to make this growth possible. Our challenge is to see that water is made available when and where it is needed, that it is of satisfactory quality, and that the cost is reasonable.

Quality is inseparable from quantity in supplying our water needs. Satisfactory quality can be assured by treatment methods now available and by other known techniques and procedures. The State is, of course, primarily responsible not only for allocating rights to the consumptive use of surface water but for controlling the quality of the supplies that are developed.

(Burleigh #4)

The Commission's projections indicated that the total water requirements of the Study Area in 2010 for municipal and industrial use, for irrigation, for navigation and for generation of new electric power could amount to about 16,614,000 acre-feet annually. The greatest need - about 11,480,000 acre-feet of the total - will be for municipal and industrial water. The 2010 estimate of 16.6 million acre-feet compares with 7,220,000 acre-feet actually used in 1958.

It is expected that the municipal and industrial requirements by 1975 will be about 4,750,000 acre-feet a year, compared with the 1,810,000 acre-feet used for these purposes in 1958.

The plan calls for continuation and acceleration of present programs for land treatment, soil conservation, agricultural drainage and irrigation, and construction of upstream flood-prevention facilities which also will retain sediment.

A comprehensive plan was developed for each of the eight major river basins, together with the intervening coastal drainage areas assigned to each for purposes of the study and these plans were integrated into a two-phase plan for the entire study area. If projected development is realized, all of the physical features in the plan will be required to be in operation no later than the year 2010.

The physical works which are part of the plan include, in addition to reservoirs for water supply, flood control and other purposes, major facilities to convey water to the points of use, flood and hurricane protection projects other than reservoirs; land treatment, stock pond, and floodwater-retarding structures for water conservation, flood prevention, and sediment control in upstream areas, and potential drainage improvements.

The 50-year plan calls for the construction of 83 major reservoirs in the Study Area in addition to those which are now in operation, under construction, or in such an advance stage of planning that their construction is assured. Seventy four of these reservoirs would be primarily for water supply although 27 of them would have additional flood control storage. Nine of the new reservoirs would be built for purposes other than surface water supply - for flood control, for the generation of hydroelectric power, for ground water recharge and, in one case, for sediment control.

The new water supply reservoirs would have a storage capacity of 44,281,300 acre-feet, including sediment and flood control storage, and, together with reservoirs considered existing, would produce a dependable yield of more than 12,000,000 acre-feet a year toward meeting the total water requirements of the area. Part of these requirements - about 2,500,000 acre-feet - would be supplied by ground water. Some of the flow of the streams would be reusable water returned to the streams after use and generally known as "return flows". The total reusable water, included as part of the dependable yield of the reservoirs, amounts to about 2,700,000 acre-feet annually.

On the basis of 1959 prices and including interest at 2-5/8 percent during the period of construction, the additional water supply reservoirs would cost about $1.5 billion. This estimate does not include the cost of reservoirs constructed for purposes other than water supply, the cost of transporting impounded water to the points of use, the cost of treating the water, or any payments that might be made to holders of water rights who might be affected adversely by the construction of reservoirs upstream from them.

(Burleigh #5)

The major new conveyance facilities are estimated to cost an additional $500 million. Upstream structures for flood prevention and sediment control would cost another $188 million, and potential drainage improvements abcut $194 million. The reservoirs recommended for purposes other than water supply would cost about $219 million.

The cost of the entire 50 year plan of development, including the major reservoirs and other projects and programs for which estimates were made, comes to approximately $3 billion, and related improvements could increase the cost to $4 billion during the next 50 years, using 1959 prices and costs as the basis for the estimates. These figures include the estimated $443.4 million cost of an interbasin aqueduct along the gulf coast.

The 1975 phase of the plan, which is an integral part of the 50-year one and which should be initiated as soon as possible, includes the construction of 30 of the new water supply reservoirs by that year, including three enlargements of reservoirs now existing or under construction and two salt water barrier impoundments. These reservoirs would have a total storage capacity of 15,990,900 acre-feet, with 4,419,000 acre-feet being for flood control, and would yield a minimum of 2,296,000 acre-feet of water annually, and cost an estimated $563.2 million.

The actual cost of all the projects and programs in the Commission's plan will depend, of course, on the price levels prevailing at the time the various elements are constructed or undertaken.

The Commission's studies indicated that no new irrigation will be required for the Study Area to meet the demands expected to be made upon it for increased agricultural production by 1975, but by 2010 irrigation will be used on some of the 1,400,000 acres of new land for which, it appears, surface water might be provided. Irrigation of about half of this land with surface water would depend upon the construction of an aqueduct to transport water from the eastern part of the Study Area along the coast to the southwest. Although this aqueduct is not part of the Commission's plan, the plan takes into account the possibility that it may be constructed in the future. In any case, the acreage now irrigated with ground water is expected to decline sharpely by 2010 because of the reduced availability and higher cost of ground water supplies for irrigation in some areas now irrigated, notably the High Plains. There will doubtless be an increase in the acreage irrigated with surface water. The plan, for example, provides new surface water supplies for areas in the Nueces River basin now irrigated with ground water, and surface water irrigation projects in the Cotulla and Crystal City areas were included as a potential future development although these projects will require further study.

It is expected that following soil conservation practices there will be built approximately 2,400 structures for the retention of floodwaters and sediment and about 670 miles of channels in headwater and upstream areas as a continuation of existing programs. These structures are in addition to those considered complete by the Commission and will have a total detention capacity of more than 3,485,000 acre-feet. They are included as part of the Commission's plan, and their esti mated cost has been included in computing the capital outlay that would be re= quired, in terms of 1959 prices, to carry out the development plan.

The plan provides for conservation treatment of approximately 80 percent of the agricultural land of the Study Area, with maintenance of applied treatment of about 75 percent of effectiveness. The cost of land treatment measures other than the cost of structures was not included, however, in estimates of the capital cost of executing the Commission's plan.

Possible future development of both the Trinity River and the San Antonio River for navigation, now under study, was considered in estimating future water requirements, but these navigation proposals are not part of the plan itself.

Major diversion and conveyance facilities needed to deliver developed surface water supplies to points of use have been included as an element in the cost of the plan although these facilities are not specifically enumerated in the report.

Five potential hydroelectric reservoirs on the Brazos River have been included in the plan on the basis of preliminary screening procedures.

The fact that the Commission reached the conclusion that there will be enough water available to meet expected needs of the Study Area for at least the next 50 years does not mean that all areas or basins within the region will have adequate supplies without the transfer of water from other areas or basins.

A number of interbasin transfers of water are in effect now, and there will be more in the future. It is planned, for example, to divert water from the Trinity River to the Houston metropolitan area in the San Jacinto River basin through the Livingston and Wallisville reservoir projects. Several new interbasin transfers are suggested in the Commission's plan The most important of these is the diversion of water from the Guadalupe and Colorado Rivers to meet the municipal and industrial needs of the San Antonio metropolitan area.

Under the proposed plan for development, the Neches, the Trinity, and the Guadalupe River basins and the intervening coastal area associated with them in the Commission's study will have water in excess of their expected 2010 needs.

On the other hand, on the basis of the requirements projected, the Brazos, the San Antonio and the Nueces basins and the Nueces-Rio Grande intervening area will have deficiencies which can be alleviated only by interbasin transfers. This also will be true of the Colorado River basin to a minor extent if water is diverted from that basin to meet the needs of San Antonio.

The deficiencies in areas near the coast could be supplied through an aqueduct generally paralleling the coast to transport water from the eastern river basins southwestward to Brownsville if the necessary supply reservoirs were constructed in those basins and the water made available for that purpose. Water moved through this aqueduct could overcome the deficiencies projected for the lower Brazos and Colorado basins. Together with water from the Lavaca Navidad intervening area and the lower San Antonio River, the aqueduct water also could supply projected deficiencies to meet municipal and industrial requirements in the Corpus Christi area and in the Raymondville and Brownsville areas of the Nueces-Rio Grande intervening area. The aqueduct likewise could supply large potential irrigation requirements in the Sinton area, in the Baffin Bay area, and in the area near Raymondville north of that now irrigated with Rio Grande water.

(Burleigh #7)

If future water requirements develop as projected by the Commission, then the aqueduct can be considered, but many complex engineering, financial, legal, and administrative problems would have to be resolved before the aqueduct could be built. The decision with respect to construction of the aqueduct is therefore, the Commission agreed, one that should be made in the future.

If, however, the water requirements projected by the Commission should occur in the amounts and at the places estimated, and if they are to be met to the fullest extent practibable, interbasin transfers of water from areas of surplus to areas of deficiency - generally from east to west - will be necessary. It is the opinion of the Commission that, as a matter of public policy, requirements of the supplying basins should be met and that water in excess of these requirements should be made available for interbasin transfer. Interim use of water transported from one basin to another should be permitted, the Commission agreed, provided this use does not create a permanent demand against the river basin of origin and provided a permanent allocation of water is assured to interim users of the water, on an equitable cost basis, to replace water temporarily made available to them.

There are opportunities for the importation of water into the Study Area from the Sabine, Sulphur, and Red Rivers and from Cypress Creek, where the water resources appear to be in excess of local needs. If water from these sources should be imported into the upper Trinity River basin, the need for the recirculation of water obtained from the Tennessee Colony Reservoir on the mid-Trinity, which is proposed in the Commission's plan, would be eliminated, and the imports would increase the surplus water available in the lower Trinity River by an equal amount.

As a member of the Commission, I should like to think that we have made a valuable and significant contribution to preparing the State and the Nation for the challenges and difficult problems that lie ahead and to helping insure that Texas will respond adequately to all the demands made upon her as we move forward toward new levels of progress, growth, and well-being.