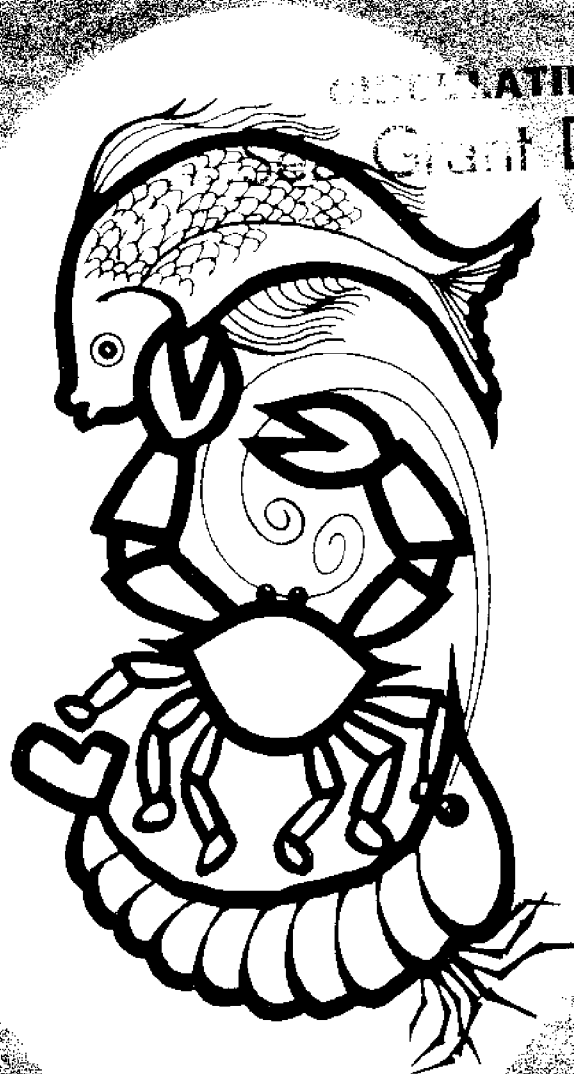


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SUMMARY REPORT

CENTER FOR MARINE RESEARCH, SEA GRANT PROGRAM, TEXAS A&M UNIVERSITY

Contents

Foreword, Dr. Samuel M. Gillespie	Page 3
Introduction, Dr. Gillespie	4
National Fisheries Overview, Dr. Roy E. Martin	5
Texas Fisheries Overview, Terry Leary	8
Texas Shrimping, John Mehos	11
Texas Finfish, Pat Pace	12
The Chesapeake Bay Enterprises Case, Harold Allen	13
Press Reports	14
Participants	18

SPEAKERS PARLEY—Four of seven principal speakers at the seafood industry symposium are pictured with a National Marine Fisheries Service chart depicting fishes of the Gulf and South Atlantic. Left to right, they are: Dr. Roy E. Martin, director of science and technology, National Fisheries Institute; Terry Leary, chief of the coastal fisheries division, Texas Parks and Wildlife Dept.; Bob E. Finley, chief of consumer education, National Marine Fisheries Service; and Dr. Robert C. Stephenson, director of Texas A&M University's Center for Marine Resources and Sea Grant College Program.



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Foreword

DR. SAMUEL M. GILLESPIE
Associate Professor of Marketing
Texas A&M University

In February, 1973, William B. Schwartz, marketing specialist, Texas Parks and Wildlife Department, and I participated in a "Resource Management Workshop of the Virginia Seafood Industry" sponsored by the Commonwealth of Virginia and Virginia Polytechnic Institute and State University. This workshop was led by my colleagues at VPI, Dr. Charles Coale and Dr. Don Long. Participants were public administrators in the Commonwealth, particularly those under the leadership of the Secretary of Commerce and Resources, Office of the Governor. The vehicle used to bring these various people together for discussion was a case study of an oyster harvester developed from research conducted by Dr. Coale and Dr. Long.

I was so impressed with the results of the workshop that I approached the Sea Grant staff at Texas A&M and suggested we undertake a similar task for the Texas seafood industry and also suggested that we broaden the audience base to include private and public interests and that we modify the orientation to permit selected individuals to express themselves on the seafood industry at the national and state level. This idea culminated in a meeting of selected participants and speakers, titled, "A Symposium on the Economic Assessment of the Texas Seafood Industry." It was held August 13-14 in Corpus Christi.

This publication contains the highlights of the meeting. In it are two types of material (1) Formal remarks or summaries of remarks made by the invited speakers and (2) News coverage and editorials by the **Galveston Daily News**, the **Corpus Christi Caller-Times**, and a summary prepared by the Department of Marine Resources Information, Center for Marine Resources, Texas A&M University.

For those who attended the symposium the proceedings should aid in recalling statements made by the speakers and the discussions which followed. For those who did not attend, these proceedings should enlighten you on the nature and scope of the meeting.

There is a little question of the positive immediate results of the symposium. Review of the participant's comments on the meeting indicates the value of the interaction between the participants. This dialogue, lasting a day and a half, permitted issues to be aired and discussed and their future outcomes contemplated.

The most important question is yet to be answered: Where do we go from here? The answer, at the surface of this writer's thoughts, is for there to emerge from among those who hold a vested interest in Texas fisheries a group of committed individuals to provide leadership in resolving the major issues facing Texas fisheries.

These issues are well-defined as illustrated in the remarks of the symposium speakers. Their solutions are less explicit, given the complexity of the industry and the constraints imposed upon it by various elements in the business-social-political environment. Nevertheless, the challenge remains to be accepted. Hopefully, the symposium will prove to be a catalyst for encouraging the leadership from all sectors—business, political, and academic—that will be needed to find solutions to long-standing problems of the Texas seafood industry.



Introduction

SAMUEL M. GILLESPIE
Program Coordinator

The Texas Seafood Industry, at first glance, would appear to be experiencing a relatively pleasant economic situation. For the past few years harvests have been relatively bountiful and ex-vessel prices have been reasonable, if not handsome. Improvements in gear technology, vessel design, and electronic devices have enhanced the efficiency of harvest operations. Better harvest-holding apparatus on vessels, improved processing procedures, better financial management, and improved sanitation controls have provided opportunity to spread the wedge between costs and revenues. Additionally, external forces such as expanded national affluence, growing population, favorable national and state political interest and intensified marine-related research have made the outlook of this industry more optimistic today than it has been for many years.

These favorable fortunes and prognostications, however, do not come without a price or an awareness that forces within and external to the industry can disrupt or erase the benefits which have accrued.

Here are some major reasons for concern: Rising costs of vessel insurance (if available at all), limited availability of manpower, increased harvesting effort by both domestic and foreign ships (without corresponding increased yields), the closing of bays to commercial fishermen, estuarial encroachment by commercial land developers, industrial and residential pollution of estuaries and resource waters, political and bureaucratic entanglements and difficulties in resource and coastal zone management.

Most of you here have a vested interest in the benefits, problems, and progress of the Texas seafood industry. It is for this reason you were invited to come to this symposium to share your experiences, to ponder probable events and to offer viable alternatives to accomplishing favorable outcomes.

For many of you the seafood industry has been your livelihood for many years. For others this industry is a relatively new experience. All of you, nonetheless, hold important positions within the industry itself or within other economic sectors and administrative bodies which impinge on the seafood industry.

It is the purpose of this symposium to provide a forum for the exchange of information ranging from statistics to complex and nettling problems so that those of us here who are unfamiliar with this industry might be provided a current assessment of its status.

To achieve this objective this symposium takes two major thrusts. A case study, developed by researchers at Virginia Polytechnic Institute and State University, is used to bring you as close as possible to confrontation with the problems and opportunities besetting a small seafood enterprise. You will be divided into groups and work together to analyze this typical situation and to offer reasonable alternatives to the firm. Dr. Charles Coale, Jr. and Dr. Donald Long of VPI & SU are here to lead the discussion of this case.

The second direction this symposium takes to orient you about the Texas seafood industry is to allow you to hear from people closely associated with the industry who are expert in their specific fields of interest.

Dr. Roy Martin comes here from the National Fisheries Institute where he is the director of science and technology. NFI, as the largest seafood trade association in the United States, provides the seafood industry a strong lobbying voice in Washington and conducts or supports a wide range of research and educational projects.

Mr. Terry Leary, chief, coastal fisheries division, Texas Parks & Wildlife Dept. has a close working knowledge of the Texas seafood industry. Mr. John Mehos, Liberty Shrimp & Oyster Company, Galveston, and Mr. Pat Pace, Pace Fish Company, Brownsville, are businessmen in the shrimp and finfish sectors, respectively.

Mr. Bob Finley, National Marine Fisheries Service, Chicago, is the major consumer marketing voice for seafood in the United States. His work has had an indelible impact on the merchandising efforts of seafood marketers and on the buying habits of the nation's consumers. Mr. Finley will discuss the current merchandising efforts being undertaken by his group in NMFS.

Mr. Harold Allen, deputy director of NMFS, Southeast Region, St. Petersburg, also brings to this symposium many years of experience in the seafood industry. He will review the events of this symposium, offer his perspective on the interface of the case study with the Texas seafood industry and, suggest how each of us might turn to one another for information, assistance, and advice.

Finally, Dr. Robert Stephenson, director of the Center for Marine Resources, Texas A&M University, will discuss this institution's relationship to the Texas seafood industry.

National Fisheries Overview

DR. ROY E. MARTIN
National Fisheries Institute

Let me express NFI's appreciation for the kind invitation to participate in this symposium. Statistically, here's how we did this past year:

Edible imports	— 2.3 Billion lbs.	Up
Their Value	— 1.2 Million dollars	Up
Imported Blocks	— 356 Million lbs.	Up
Imported Fillets	— 172 Million lbs.	Up
Imported Shrimp	— 253 Million lbs.	Up
Value of 72 Landings	— 704 Million dollars	Up 9%
U. S. Edible Landings	— 2.3 Billion lbs.	Down 4%
Cod, Haddock, Halibut, Whiting, Dungeness Crab, Soft Clams	— All Down	
Salmon	—	Down 31%

I address you today with a great many concerns that trouble me deeply. While our industry continues to enjoy demand greater than supply we find our nation without any commitment to an oceans policy.

Seafood, a living resource, an ocean treasure, food from the sea, valuable protein source—these terms certainly sound good in speeches—but **WHO**, I question, is listening?

We fish in all the corners of this great country of ours, but we do so without some binding thread that draws us together for a national purpose.

Our President has recognized our contributions, has created the NOAA, the Sea Grant program, and has recommended eating fish as a highly desirable alternative protein source. **But**, and this is a very strong but, **how** can the Office of Management and Budget cut funds in an ocean budget that already had been far too small? Why is the Department of the Interior still trying to usurp ocean authority from the Commerce Department? Where and how does the State Department fit into this complex picture? When will we learn to leave politics out of these decisions and begin thinking in terms of protein and food supply? Without a **stated** national ocean policy and commitment, my contention is that we will continue to flounder in a sea of indecision.

Policy, if it ever comes, must start with new considerations for the fisherman. **Suppose** we had a 200 mile fishing zone tomorrow. Most of our fisheries are not equipped to gather in the harvest needed to maintain our increasing per capita consumption of seafood. This is due to long-antiquated policies developed over many previous political administrations that little understood what supplying protein to an expanding population meant. We have not permitted our fishermen to be competitive with foreign efforts. Without new policies regarding vessels, gear and resource management, we shall continue this nation's slow but steady domestic decline of fishery activity.

ECKHARDT OPINES—Congressman Bob Eckhardt of Houston, left, talks with Dr. Robert C. Stephenson, director of the Center for Marine Resources and the Sea Grant College Program at Texas A&M University. Eckhardt is a member of the house merchant marine and fisheries committee.



Some say the Federal government cannot afford to assist in the development of a strong domestic fishing industry. I say why not? (We can't eat moon rocks, but look at NASA's budget). Ironic isn't it, that the money NASA had to cut from their budget was an amount larger than this country's entire budget devoted to fisheries?

Yes, we may be turning to the ocean as a new frontier for economic development. But I wonder who will win when we are placed alongside the oil, gas, mineral, defense and recreation interests.

It is also essential that we keep all of our import options open to us as a processing industry. It is my firm opinion that all available protein, both domestically-caught and imported, will be needed to supply a growing demand by U. S. consumers. Legislation, such as the Burke-Hartke Bill which would roll back imports to 1969 levels, must be modified to the exception of food products. We are dealing with food and people—not automobiles and television sets.

There is a limit to total ocean productivity. The long-held concept of limitless resources—jump in the boat and go catch fish—there will always be more—you can't catch them all—no longer is true. That concept did our U. S. fishermen a great disservice. Other nations expanded their fleets, modernized their gear to go after this "unlimited amount of protein." They did so with the full monetary and program support of their respective governments. Capitalwise, we never had a chance to be competitive.

We, a red meat-based protein economy, were not much concerned with other protein sources just a few short years ago—**were we?** But how we feel the pressure on all stocks of protein today. A little too much rain up in soybean country, a shift of a current off Peru—it did happen and we are living with the results today.

Worldwide, ocean fisheries are yielding approximately 75 million metric tons. (Do you realize that 30 short years ago that figure was only 25 million tons?) Projecting from what we know of stocks today, 100 million metric tons may be the world's sustained catch. How soon might this figure be reached—best estimates say it's only 10 to 12 years away.

Sixty-five percent of our total U. S. consumption is imported—this caused a trade deficit last year of approximately \$1.3 billion. That figure will continue to increase. Why?

- More Americans are eating more fish (in 10 years our average has increased from 10.5 to 12.2 pounds per person).
- World population continues to grow.
- That growing world population would like to eat more protein and it puts demand pressure on available stocks, resulting in higher prices.

The fish are there, in our own backyard as a matter of fact, but because of outdated laws governing our own efforts we cannot compete. While the rest of the world is in our fish pen, our total landings continue generally unchanged or slowly drift downward.

Territorial limits such as 200 miles, 50 miles, etc., sound good, make excellent headlines, and are politically fine for back-home consumption. But until we get basic agreement on the management of all stocks worldwide, we will now have faced the real problem—**management**. Management of fishery resources is the key.

There are no easy solutions; the variables are many, the considerations complex. If successful, the Law of the Sea Conference will only be but a beginning. I have often been asked what are our alternatives if the Law of the Sea effort fails completely and a 200 mile or other territorial limit is not practical or enforceable.

Building a competitive system to harvest that protein with Federal support, tax credits and incentives, etc., untie our hands. Given a chance, we can out-fish and out-process any nation on earth.

Turning now to other issues of national concern; these I will briefly touch upon, specifics can be detailed in our discussion period.

Nutritional Labeling

This is voluntary as yet, with many companies analyzing products. FDA has set some very definite rules to follow. Since handbook and other reference data are no longer considered valid by FDA in determining compositional information, each individual company must use actual data that will, when tested by FDA, be within 80 percent of what is stated on the label. Looking to the future, NMFS has begun a data bank program to assemble as much information as possible on fishery composition. We are hopeful that one day FDA will consider this data as representative of all fishery products and industry can then tap this source for labeling data.

Nomenclature

Still one of our biggest problem areas with regulatory officials. NFI has called for the establishment of an advisory panel empowered to render reasonable decisions on fish naming. It is my personal opinion that we have passed the point regarding protein supply that we can afford to play games over names. We know names like cancer fish, dog fish, croaker, etc., would have a tough time in the market place. Give these products reasonable names and move them into the market.

Fish Inspection

As you know, NFI has consistently backed a reasonable inspection bill. None has been passed into law as yet. Some minor attempts have been made in this Congress; one possibly with a new twist—put the inspection service under the USDA (the argument being it is logical since they inspect other meat protein sources). This would also result in taking fish problems out from under FDA final control. Believe me, it is frustrating to work up a reasonable position agreed to by NMFS and the industry only to find that one not knowledgeable in fishery problems, the FDA, does not agree, and prevents a satisfactory conclusion.

Fuel Shortages

The NFI and the food industry worked very diligently to establish harvesting and food processing as having top priority on fuel allocations. Should industry find problems in this regard, they should contact their local government oil and gas office for relief.

Flesh Separator Technology

I would soon like to see established what I call the "Catch All Concept" of fishing. All fish caught incidental to the main resource sought, that is within reasonable size, should be landed and sent to a processor that has a flesh separator. These fish would be processed and all the usable protein flesh made into blocks, shapes, portions, etc. On an average, we could gain an additional 20 percent increase in yield from our efforts. There is no reason that the U. S. should not have a bigger block industry; another use perhaps for underutilized species as well.

Coastal Zone Management

A good bill passed the Congress last year but we are still waiting for it to be funded by OMB. This is an important start to our total management scheme, especially where estuaries are concerned. We must continue to pressure for funding.

Export of U. S. Species

One hears this mentioned occasionally in connection with decreasing balance of payments. Frankly, our needs are so great that any such export is just too small to really matter. Exporting under-utilized species—some perhaps but again not enough to do much good. Instead, why not get federal backing, enlarge our marketing efforts and use the protein here at home.

Mercury and Other Microconstituents

The 0.5 p.p.m. mercury guideline is still with us. Studies are now well underway to scientifically determine how accurate the 0.5 p.p.m. figure actually is. I'm afraid we may still be a year away from good factual data. Results to date, however, are encouraging. We should not let politically motivated situations like the recent Japanese occurrence effect the scientific analysis of future data. Many other microconstituents are under study by the FDA these include arsenic, cadmium, lead, etc. From the experience of the mercury scare, I seriously doubt that we will ever have as great a problem with the other heavy metals. Problems, if there are any, will be handled with much better finesse.

Field investigation is now underway to determine the bacteriological profile of retail seafoods. NFI is also running an identical survey—preliminary results indicate very few problems. I feel no need for another set of standards such as these. Our analysis has shown good, consistently wholesome products time and time again. I cannot see why a product that exceeds some FDA-developed figure regarding total numbers of bacteria must be re-labeled "Not meeting FDA standards for bacteria." This is not a public health question. No one argues FDA's role if they must move on a problem that effects the health of the public. I think FDA is beginning to read more into their act than was originally intended.

Aquaculture

Certainly the potential and interest are there and with time the problems will be overcome and we can then enjoy another source of raw material. Additional research must be done on disease, population density, feeding, temperature control, pollution, etc., before we can tie down the economics sufficiently to interest more people in joining this exciting business venture. It is being done now with oysters, shrimp, pompano, catfish, and trout. A good business investment for the future.



SHRIMP BOATS—These Aransas Pass vessels are part of Texas' large and growing shrimping fleet.

(Texas Highway Dept. Photo)

Quality Control

Our processing industry recognized early the benefits of producing high-quality products. We endorsed a good inspection bill, we are working on a code of good manufacturing practices now, and we have been spending considerable amounts of capital on sanitation improvements and new facilities. The NMFS has developed an excellent approach to inspection where a plant's Quality program is certified as having met certain standards and rather than having a fulltime inspector present, routing checking of Quality Analyses records and unannounced visits prevail. The program promises significant reductions in inspection costs and extends an inspector's time to cover additional plants in his area. I suggest that similar attention to sanitation be given by boat owners. Quality starts as soon as the fish leaves the water.

Codex Standards

Government, industry and NFI have played a leading role in the international negotiations surrounding Codex standards. These will one day be the minimum standards upon which all fishery products will be traded upon. Twenty-five product areas are under various stages of review. Several have completed their ten-stage process and will soon be proposed to FDA for adoption. NFI will be doing most of the petitioning.

Pollution and Waste Disposal

Our industry once thought that most of our waste was "food for fish." But we were surprised when the House-Senate Conference Committee traded our exemption away for date extensions in last year's Clean Water Bill. Mike Soderquist (Oregon State and Environmental Associates) has just completed the first phase of an extensive survey of the fish processing industry. From these results EPA will set effluent guidelines for our industry. There is still much to do in this regard. Contrary to many, I believe control of pollution is beginning to take place—lakes and rivers are starting to come back, DDT levels in fish are dropping, and other toxic substances are being better understood. Again, NFI has been in the forefront concerning the reasonable—and I stress reasonable—use of the environment.

Concluding with a final thought, it has always been my contention that the sport fishing industries and commercial fisherman can live together. Sport fishing has a lot of intangibles to measure—leisure, peace of mind, sport, relaxation. But I would remind regulatory officials and other vociferous advocates that nothing is so important as providing protein to a hungry nation. No one ever seems to factor that thought into the discussions and arguments.

When you consider the weight of the FDA, EPA, OSHA, USDC, Customs, State Public Health Departments and so on, we are a busy industry. We are concerned—we know you are, too.

Texas Fisheries Overview

TERRY LEARY
Texas Parks & Wildlife Dept.

Before considering the fisheries of our state alone, let's look at the national view.

The U. S. commercial fishery is big business, producing 5 billion pounds of products valued at \$643 million in 1971. This is a sizeable resource by any measure. About half of the production was composed of human food products and the remainder went largely to animal food. Value of this rich protein source has increased sharply this year as we seek to compensate for the loss of protein from the Peruvian anchovy disaster and our own soybean crop failure.

The Gulf of Mexico provides the major fishery for the U. S. and three Gulf states are among the top six states in value of fishery production. Not many Americans, however, would think to include Texas as one of the top five or six fishery states, because we just don't have the image. We have such a wealth of other natural resources that the size and value of our fishing industry is not so obvious as in states where other resources are limited.

Recreational fishing is also big business. Gulf coast fishermen spent an estimated \$404 million in 1970

for an average of \$178 per year per fisherman. Last year in Texas we licensed one and a half million anglers with those under 17 and over 65 years of age exempt from licensing.

It can be said that without qualification that fishing, both commercial and recreational, provides a major resource to Texas.

Let's consider some of the components of our fishery. Near the top comes our shrimp fishery, the number one U. S. commercial fishery in dollar value. We also support a substantial fishery for sport shrimp fishermen. Their boats outnumber our commercial fleet, and while their catch is not so large, they make up for it in fun. It's a great sport.

Finfish make up by far the largest target group for recreational fishing. Because of the change from wet to dry climatic conditions from East to South Texas, the catch composition changes. Anglers in Galveston Bay catch, in descending order, croaker, sand trout, speckled trout, drum and gafftop; while Laguna Madre fishermen take speckled trout, croaker, redfish, drum and flounder.



SEAFOOD PROBLEMS PROBED—State Representatives attending the Texas Seafood Industry Symposium chat with Texas A&M University marketing professor Dr. Samuel Gillespie, left, coordinator of the program. They are Rep. Greg Montoya, Elsa; Rep. Fred Agnich, Dallas; and Rep. Leroy Wieting, Portland.

When sport and commercial fishermen seek to take the same species in the same areas simultaneously, conflicts can occur. Actual, direct competition between the two interests for the same fish is not so common as many fishermen believe. Resolving the differences of opinion, however, is a very real problem.

The fisheries for blue crabs and oysters are oriented toward our upper coast because of the naturally lower salinity conditions more favorable to them. The oyster fishery is largely centered in Galveston Bay. Both species provide substantial commercial and recreational fishing. The areas from which oyster may be taken are defined by the State Health Department in a cooperative program with our department and the Food and Drug Administration.

Mariculture, the practice of raising sea animals or plants, is centuries old. While oysters have been raised on private bay leases on our coast for many years, considerable recent interest has been generated in pond culture of marine animals. Because shrimp grow rapidly reaching market size in about 120 days and because they bring a premium price, interest has centered on

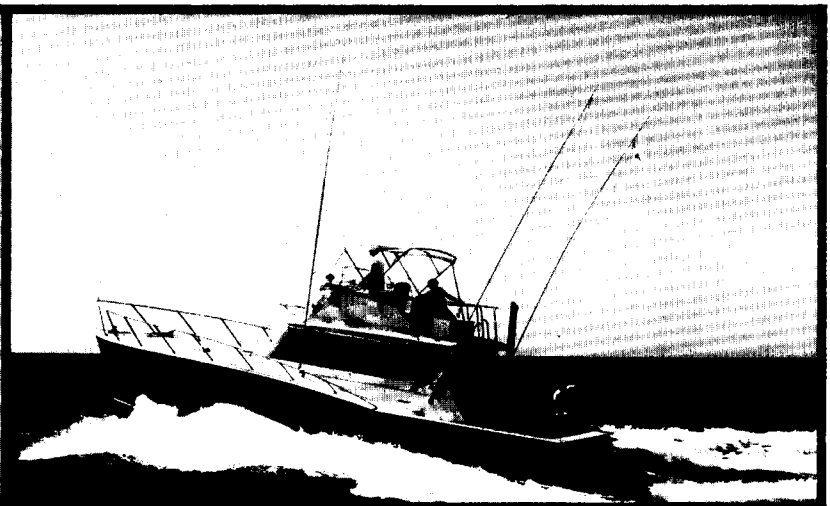
various species of saltwater variety. As yet, results are erratic: though 1,000 pounds of shrimp have been produced in a ¼ acre pond.

Until recently, state laws have hindered shrimp culture, but recent legislation will encourage this activity. In studies conducted by our department at our saltwater pond research station near Palacios we find the most difficult and crucial part of the operation is estimating the number of shrimp surviving in the ponds from day to day. We try to provide daily feedings of about 5 per cent of the estimated weight of shrimp in the ponds. Overfeeding results in poor water quality and loss of shrimp while underfeeding causes cannibalization or slow growth.

When fully perfected, mariculture offers promise of furnishing the fresh products when natural production is low. One example would be year-round production of bait shrimp from ponds heated by power plant cooling water. Products would also command a good price during periods of fishery failure. At present, for example, both Texas, Louisiana, and Mississippi face a bleak oyster season as a result of extensive flooding on the watersheds. Oysters will be expensive this winter.

SPORT FISHING — *Recreational fishing is big business in Texas. There are more than one and a half million licensed anglers.*

(Texas Highway Dept. Photo)



Fishery production does fluctuate and the greatest influence is the environment, both natural and man-made. Floods, hurricanes, droughts, as well as pollution, dredge-fill projects, and diversion of the freshwater and nutrients from the estuaries all affect and influence the fishery. Over 95 per cent of the commercially landed fishery products consists of estuarine-dependent species; that is, fish or shellfish which must spend at least a portion of their life cycle in the bays. Protection of the natural environment is extremely important to those whose livelihood is linked to the seafood or recreational fishing business.

This brings us to management—or manipulating man's relationship to the fisheries.

While we cannot alter the vast climatic changes which play such an influential role, we can operate within our limits of understanding.

During drought years, for instance, oysters are weakened by high salinity and high temperatures which are favorable to the development of a fungal disease of mollusks. We learned that most Texas oysters will die during their second summer under such conditions. By lowering our minimum size limit by one-half inch we encouraged oyster fishermen to take the oyster the winter prior—when he was still fat and healthy.

There are many ways that fishing regulations can be adjusted to aid the fishery in obtaining its maximum sustained yield. The big question is maximum yield of what? Pounds? Dollars? Profit? Employment? Recreation? Preservation of a way of life? All these factors are important and must be considered by the manager or regulatory body.

Until fairly recently, most Texas fishing regulations were enacted by the Legislature as general and special laws. Some applied only to a single county and were frequently passed on the local and unopposed calendar of the Legislature. Thus, we have had an often confusing system which changed from bay to bay.

More and more the legislature has delegated responsibility to the Parks and Wildlife Commission on a county by county basis. In its last session the Legislature gave the Commission responsibility over the whole coast with the exception of the Galveston Bay area. Prior to setting regulations the department will present its recommendations at a series of hearings and invite public response. That is when the input is made on what type of yield the users desire.

The trend for good and uniform management is expanding, and I look for more cooperative effort among the adjoining states and between the states and the Federal Government. The regulation of fisheries within the territorial limits has traditionally been left to the states. With more users of the resources—as exemplified by the expanding number of foreign fishing boats on the high seas off our coast—it becomes clear that all of us who are associated must work together to seek the long range objectives on which we can all agree—and to understand our mutual problems. There is, we feel, sufficient resource to provide for all needs only so long as we plan wisely for its harvest and utilization.



CLOCKWISE FROM TOP TO LEFT: Dr. Samuel Gillespie, Cong. Bob Eckhardt, John Mehos, Parks and Wildlife Dept. biologists, oyster boat.



Texas Shrimping

JOHN MEHOS
Liberty Fish & Oyster Co.

The Texas shrimp industry is experiencing most of the problems common to other fisheries. Effective treatment of these problems by previous speakers allows me to concentrate on what I believe to be the paramount need of the industry: an effective resource management program.

In recent years demand for fishery products, particularly shrimp products, has increased dramatically, not only in the United States but throughout the world. The basic cause is twofold:

- Improving economic conditions;
- Rising protein requirements of an increasing population.

One result has been steadily mounting pressure upon fishery resources everywhere at a time when few if any effective resource management programs exist either here or abroad.

Fierce competition among the maritime nations has led to jurisdictional disputes wherever waters are fished in common. The fish are under heavy pressure and in some cases are near the point of extinction. Even more deplorable is that very few, if any, nations manifest the desire to join together in effective management.

Here in the Gulf of Mexico matters are not any better. Industry is annually building shrimp trawlers at a rate that cannot be anything but biologically and economically harmful to the industry.

Until now, neighboring states have shown little or no desire to join in a coordinated management program designed to sustain the shrimp resources of the Gulf of Mexico and to bring the fleet optimum return for their efforts.

There is not much time left. The shrimp industries of the states bordering upon the Gulf of Mexico, and this includes the Mexican nation, must join together and take the initiative with their respective governments to work out such a program. If we continue to stumble and grope our way along as we are now doing we may do permanent damage to the resource itself, or price ourselves out of the marketplace, or at least place the fleet in jeopardy of suffering never-ending economic cycles.

Texas Finfish

PAT PACE
Pace Fish Company

Texans don't eat as much fish as citizens of other coastal states. My firm markets over sixty per cent of its product beyond the Texas state line. Nor do Texans know how to prepare fish for the dinner table. They are preoccupied with frying fish and do not experiment with the many alternative ways of preparing fish.

The marketing practices used to get finfish to the consumer have outlived their usefulness. Slowly, the wholesaler is being eliminated as a middleman in the distribution channel, especially where fresh product is marketed to the retail market. Their added cost is circumvented by the larger retailers who prefer to deal directly with the fish dealer on the coast.

The handling of finfish throughout the distribution system borders on the deplorable. No stage of the channel is excluded from this indictment. Finfish often reach the fish dealer which have had little attention to adequate icing and proper handling. The fish dealer often "pushes" marginal product in order to minimize his losses. And the retailer, because of merchandising apathy or ignorance fails to care for properly the product once it gets into his market. Little wonder that the quality of finfish at the retail level fails to excite the consumer. All of us are to blame. Clearly, our industry literally stinks!

The answer to improving the quality of finfish in the distribution channel is simple—educate those who handle finfish. However, getting these people to attend workshops and then implement what they have learned is not a simple matter. Initial steps to educate retailers are underway by Texas A&M University and the Texas Parks and Wildlife Department through Retail Merchandising Workshops in Houston and Dallas. Additional attention must be given to other distribution channel firms, particularly fresh finfish wholesalers and coastal dealers if significant progress is to be made.

Price and supply instability is a problem not uncommon to the finfish sector. Much of this can be attributed to the so-called "gypsy peddler" who operates without a commercial license; pays no taxes, has no boats, is not inspected by health officials and has few sanitary facilities. He is buying where he can along the coast and selling to whom he can—from the back of his

truck. Many of these businesses are shortlived due to inadequate capitalizing and poor business practices. Their presence creates havoc in the distribution channel because they disrupt orderly buying and selling practices.

Not only are the processor's normal sources of supply disturbed by the gypsy peddler frantically seeking sources but also the processor's traditional customer contacts are unsettled when this "merchant" preempts the processor by selling product to retailers at a price considerably below the wholesale market price. These activities affect the processor's inventory level requirements at both ends—he may witness times where he is short of product because his normal sources of supply sold to the peddler and he may have to endure heavy inventories or reduced prices because the peddler has sold to his traditional customers. This would not be so disturbing for the processor if the "gypsy peddler" developed a set of suppliers and sells on a permanent basis. However, the pirating activities in which he engages tend to cause unnecessary distribution consequences.

It is common knowledge that the Texas fisherman harvests finfish at a disadvantage relative to similar fishermen in other states. A major obstacle is the large amount of bay waters closed to net fishing. This is an old problem promulgated by the self interests of the sport fishermen. As it is now done (trotline fishing), the commercial finfisherman is hard pressed to earn a living. Clearly, there needs to be attention given to a workable arrangement between commercial and sport fishermen so that each might utilize the benefits of the resource in the bay waters. Other states, such as Florida and South Carolina, have negotiated arrangements which have led to legislation permitting both interests to enjoy the fruits of the coastal waters.

Middlemen inefficiency, poor processing and handling practices, unorthodox middlemen and limited resources due to legislative restrictions are problems of a very serious nature to the finfish sector of the Texas fishing industry. Strengthened and coordinated effort through existing associations and focused concern upon pertinent legislative committees and administrative agencies are the key avenues to alleviating this problem.

The Chesapeake Bay Enterprises Case



GET TOGETHER—Harold B. Allen, deputy southeast regional director of National Marine Fisheries Service, urges fishermen to "get organized" and "stay competitive" against foreign intrusion.

HAROLD B. ALLEN
National Marine Fisheries Service

The first message that the Chesapeake Bay Enterprises case has for the Texas seafood industry is that every businessman and manager should open his eyes to the changes taking place around him and measure their effect on business and on the fisheries. Many of the problems faced by Jim Profett (the businessman in the case study) are similar to those which must be faced in Texas. Those in the seafood industry, as well as in State and Federal Government, should consider some basic questions, even if answers are not immediately available:

- What is the short term and long term outlook for shrimp and finfish resources of Texas? Are these resources fully utilized? Underutilized? Are they effected by pollution or other adverse environmental conditions?
- What major national economic factors can we predict which might affect profits in the seafood business? Increased prices, fringe benefits for employees, competing foods, fuel shortages?
- Have we looked at the international picture regarding fisheries management and foreign fisheries? Are U. S. vessels, which are now fishing off foreign countries, likely to be forced to return to the Gulf? Might massive foreign fleets enter the Gulf? Are there presently too many boats fishing for existing shrimp stocks? What might the state and federal agencies do about this?
- What new fishing opportunities exist? Should existing or new boats be used to fish for mullet, mackerel, rock shrimp, drum? What are the market prospects for these species? Can state and federal agencies help in the development of new fisheries?

A second message this seminar brings out for the Texas seafood industry is that the different segments can work together. Fishermen, dealers, processors, universities, and state government officials must work together in order to have an effective policy voice in the future of the Texas seafood industry. This can best be done under the auspices of existing industry associations and the state compacts such as the Gulf States Marine Fisheries Commission. But this means each individual must work at the job, attend meetings, and let his views be known. In these days of rapid change, "business as usual can be fatal."

Press Reports

Seafood Meet Begins Today

Conflicting goals and problems of people and industries that have a direct bearing on the Texas seafood industry will be discussed today and tomorrow during a statewide seafood symposium here.

Sponsored by the Center for Marine Resources of Texas A&M, the economic assessment of the Texas seafood industry will bring together state representatives, shrimpers, tourist bureau people, bankers and representatives of the petroleum industry.

Heading the symposium will be Dr. Sam Gillespie, associate professor of marketing at Texas A&M. He said the intention of bringing together such diverse industry interests was to make them more sensitive to the problems of the Texas seafood industry.

"As far as the seacoast is concerned, we're all in this together," Gillespie said. He said they all must learn to work side by side on the problems and opportunities of sea resources.

Gillespie said that environmentalists and fishermen alike understand that offshore drilling and dredging can be in serious conflict with the needs of commercial and private fishermen, "but the world must go on."

"They are all needed and you just can't get rid of one or the other," he said.

He explained that the meeting was not concerned with problem solving but simply a means of making people more aware of the seafood industry's problems. "Some people are too worried about generating tourist revenue or with their own sector of business," he explained.

Hopes for the conference are that the 40 or 50 people involved will go away with knowledge that will put them in a better position to direct our resources more efficiently, Gillespie said.

The key, he said, was to take the many problems and turn them into opportunities.

One example of this is to take advantage of rising seafood prices by using the extra profit to attract more and younger men into the industry, the Texas A&M professor said.

He said the fishing and seafood industry is faced with shrinking manpower and a rising average age of men employed in the always tough and strenuous work.

Another problem he said the industry encounters on the Texas Coast is the closing of bays to commercial fishermen by county governments. "Nearly 60 to 70 per cent of the bays along the coast have been closed to commercial fishermen," Gillespie said. This forces them to take risks in deep waters while some of the more desirable seafoods are found in the bays, he explained.

Opportunity lies in the turning of interest to finfishing, which he said were an underutilized species of fish. "There is a strong and growing market for these fish, particularly in Japan, and we must make the commercial fisherman aware of these new areas," he said.

"A double-edged sword" of opportunity might be the extension of the coastal limits of the United States to 200 miles, especially if Mexico extends theirs, Gillespie said. He said that the fishermen also must be made aware of improvements in equipment, new designs in vessels and increased opportunities for financing.

Featured to speak at the Monday luncheon will be Bob Finley, who handles consumer marketing affairs for the National Marine Fisheries Service.

A registration fee of \$10 will cover meeting expenses. It is the first of its kind in Texas.—CHRISTI DUERR, Corpus Christi Caller-Times, Aug. 13, 1973.

Fishery Management Said Chief Problem

Management of fishery resources was cited as the paramount problem in the fishery industry by speakers at a symposium on the Texas seafood industry here yesterday.

Texas consistently ranks among the top six states as a seafood producer and is the center of the world's shrimping industry. The shrimping industry is a major contributor to the state's economy.

Dr. Roy E. Martin of the National Fisheries Institute, Terry Leary of the Texas Parks and Wildlife Department, and John Mehos of the Galveston Liberty Fish & Oyster Co. concurred in the need for a coordinated approach to management of fishery stocks. This need is necessary on all levels they said, from within the state, between adjoining coastal states and among nations.

"The fisheries can't survive without proper management and regulation. The nations must get together to formulate rules to regulate fishery stocks or there won't be any to worry about. If we don't take a course of action, truly no nation can survive as a fishery nation," Mehos said.

Leary pointed out that fishery stocks fluctuate widely due to natural causes—floods, droughts and manmade causes—pollution, freshwater diversion, dredge spoil deposition. "We can't alter natural processes but there are many ways fishery regulations can

be altered to help the industry," Leary said. For example, if conditions will lead to a decline in stocks, the season can be moved up or extended, he said.

Mehos also stressed the need for the industry to cooperate in management. "The industry is rushing forward to supply vessels instead of facing rising costs and the drop-off in catches. This can lead to too many boats for a resource size and gradually drive the fishery to extinction," he warned.

The problem of conflicting regulations within Texas is slowly being resolved by legislation, Leary said. The Parks and Wildlife commission has the responsibility to coordinate fishery regulations for almost the entire Texas coast.

The symposium is being attended by 50 representatives from the seafood industry, state and federal agencies, universities, and the state legislature. The Center for Marine Resources and the Sea Grant Program of Texas A&M University is sponsoring the two-day meeting.

Today's activities will feature an overview of the Texas fishing industry by Pat Pace of the Brownsville Pace Fish Co. Application to the Texas industry of a case study on an oyster firm discussed at the meeting will conclude the symposium.—CHRISTI DUERR, Corpus Christi Caller-Times, Aug. 14, 1973.

Government 'Failure' Is Blamed

Outdated laws and failure of the U. S. government to provide incentives and support for its fishing industry is placing the country at a competitive disadvantage with other nations, a fisheries researcher told participants in a seafood industry symposium here today.

"If given the chance, we can outfish and outproduce other nations," said Dr. Roy E. Martin, of the National Fisheries Institute.

But, he added, the government is not providing the support with legislation or financial aid to keep the fishing fleet competitive.

Martin made the remark to about 50 representatives from state and federal agencies, the seafood industry, the state Legislature, and universities. His speech gave a national overview of the fisheries industry.

Martin said that with the increasing demand for protein, old-line policies must be changed to give priority to the capture of fish from the sea.

"We are a nation not committed to an ocean policy so the industry flounders in a sea of uncertainty," the researcher said.

Foreign encroachment on the Texas fisheries can only be solved by modernizing our fleets and giving support to fishermen, unless an international agreement can be reached, Martin said.

Martin said the solution to world fishery problems is cooperation in managing all fishery resources.

His speech was part of the two-day meeting focusing on the conflicting goals and problems of people in the industry that have a direct bearing on the Texas seafood industry.

The meeting is sponsored by the Center for Marine Resources and the Sea Grant College Program of Texas A&M University.

Also scheduled to speak today were Robert E. Finley of the National Marine Fisheries Service and John Mehos of the Liberty Fish and Oyster Company.—CHRISTI DUERR, Corpus Christi Caller-Times, Aug. 13, 1973.

Sales Changes Urged

Processors of Texas seafood must forget about fish handlers and market a product in a form consumers demand, the owner of a Brownsville fish company urged today at the final meeting of the Texas Seafood Industry Symposium.

Pat Pace of the Pace Fish Co. said the delivery system of fish to Texas tables is inefficient.

The five-step chain of fisherman-processor-wholesaler-retailer and consumer looks great but is not resulting in enough efficiency to continue for a profit, Pace told his audience of about 50 persons.

It is not resulting in a product pleasing to consumers, Pace said.

Elimination of the wholesale step, Pace said, would bring the fish into line with other industries, and would allow better service to the volume market of grocery and restaurant chains.

Pace said there would still be a place for some wholesalers in sales to small grocery stores and gourmet restaurants.

The present chain, the fish company owner explained, maintains "gypsy peddlers" who purchase fish from fishermen and sell it directly to retail outlets.

These men operate without licensing and often deliver an inferior product, Pace said.

The symposium, which focused on the goals and conflicts of the Texas seafood industry, ended this morning. It was attended by representatives from state and federal agencies, seafood industries and universities. Also present were Texas Reps. Leroy Weiting of Portland and Gregg Montoya and Fred J. Agnich. U. S. Congressman Bob Eckhardt attended today's session.—CHRISTI DUERR, Corpus Christi Caller-Times, Aug. 14, 1973.

Good Beginning

A start was made here Monday and Tuesday at the Texas Seafood Industry Symposium to unify one of the major industries contributing to the Texas economy, and the Center for Marine Resources and Sea Grant Program at Texas A&M University deserves praise for making it possible.

The \$70 million seafood industry is having some of its best times economically. It is standing on the threshold of what will probably be a successful venture to capture more of the consumer food dollar as it develops new products and new ways to serve sea foods at a time when the consumer is seeking cheaper and more convenient ways to put protein on his table.

But the industry is also facing some major concerns which could have a disastrous effect in the future. Dr. Roy E. Martin of the National Fisheries Institute, Terry Leary of the Texas Parks and Wildlife Department, and John Mehos of the Galveston Liberty Fish and Oyster Co. pointed out at the meeting that management of fishery resources is a paramount problem so that stocks do not

disappear from overfishing. As Texas Gulf fishing grounds become more crowded, the need for cooperation among the state's fishing industry and that of other states and nations becomes apparent.

To initiate successful cooperation, however, there must be a strong, unified base at the state and local level. That is why this symposium proved so valuable. It was the first organized effort ever made in Texas—and in much of the country—to bring together all levels of the industry and give its representatives a chance to discuss the goals and problems of their common livelihood. Present were commercial fishermen, retail operators, fish processors, legislators, university personnel, and members of the state and federal agencies. For many it was the first chance to find out who was available for help with problems and to meet them personally. This personal contact will hopefully spread throughout the industry—speeding up lines of communication and opening up others—so that the industry can present a solid base of support in efforts to solve its problems.—EDITORIAL, Corpus Christi Caller-Times, Aug. 16, 1973.

Lack of Incentive, Support for Fishermen Cited

The United States has a soil bank for farmers, but has failed to provide incentive and support for its fishermen who also produce food, the Texas seafood symposium was told Monday.

Other nations fully subsidize fishing fleets to reap protein resources of the seas, while federal indifference has placed the United States at a competitive disadvantage, Dr. Roy E. Martin of the National Fisheries Institute told participants at the Emerald Beach Holiday Inn at Corpus Christi.

And yet, Martin said, "If given a chance, the United States fishing industry could outfish and outprocess any other nation in the world.

"Without a national oceans policy," he said, "we will continue to flounder in a sea of indecision while fisheries continue to decline and Americans pay more and more to import seafood products."

There were 52 representatives from seafood industry concerns, universities and the federal government at the symposium, which was coordinated by the Center for Marine Resources and the Sea Grant College program of Texas A&M University.

Martin said that with the increasing demand for protein sources, old line policies must be changed to give priority to harvesting the protein resources of the sea. At the present time, U. S. and Texas fishing vessels are inadequate to the challenges of competition, he said. "If we had a 200 mile limit tomorrow," he added, "we would be unable to take advantage of it.

"As long as there is no real concern by the government for fishermen, the U. S. catch will continue to decline," he said.

"Harvesting and processing of this important food resource should have top priority," Martin said.

Unless international agreements on fisheries resources can be reached, Martin said, the only solution for the U. S. fishing fleet against foreign encroachment is to get competitive.

Martin's talk was part of a two-day meeting focusing on conflicting goals and economic problems of people in an industry which produces in Texas—at dockside prices—\$80 million worth of food a year.

John Mehos of Galveston, past president of the Texas Shrimp Association, the National Shrimp Congress and the Shrimp Association of the Americas, told the symposium that the shrimping industry is rapidly approaching a critical period in its history.

He said the living resources of the sea must be jointly managed and conserved, or "after a while there will be nothing left to fight over."

Fisheries, he said, cannot survive without agreements to conserve a renewable living resource. The shrimp industry, and all the people related to it, need to get together to manage and conserve nursery areas.

"If we don't," he said, "we're going to drive a resource we have thought to be inexhaustible to near-extinction."

Dr. Samuel Gillespie, associate professor of marketing at Texas A&M, said the intention of bringing diverse industry interests to the symposium is to make them more sensitive to problems facing them all.

The seafood industry in Texas, he said, needs to take advantage of rising meat prices and the use of seafood as an alternative protein source to attract more and younger men into the industry. —JOEL KIRKPATRICK, The Galveston Daily News, Aug. 14, 1973.

Fish Industry In Texas Reportedly 'Stinks'

The Texas finfish industry "literally stinks," Pat Pace, owner of Pace Fish Co. in Brownsville, told the Texas Seafood Industry Symposium Tuesday.

Pace, who is a director of the National Fisheries Institute and who on Monday was named by Lt. Gov. Bill Hobby to a citizens advisory council on water resources, said the finfish industry in Texas is deeply neglected.

The term "finfish" is used by industry members to denote fish with fins as opposed to shellfish such as crab or shrimp.

Pace said only \$5.6 million of the \$80 million dockside value of Texas Fisheries was represented by the finfish industry.

Pace said Texas is a poor market for fish.

"The people of Texas only know how to fry fish," he said.

Pace said his business harvests trout, redfish, black drum, some flounder and red snapper.

He said he harvests Texas mullet and sells them in Florida.

Sixty per cent of his sales are outside Texas.

Pace told the 52 men and women present at the symposium that the Texas finfish delivery system is inefficient.

He said, "The majority of them operate on a day to day basis and out of their hip pocket. There is no trust in this business. The philosophy prevails, 'I'll get you before you get to me.'"

He added, "Sanitation, properly handled, is seldom encountered in our business—our industry literally stinks."

He said many Texas fish houses operate the same way they did 75 years ago.

Pace predicted gradual elimination of wholesale fish houses in Texas and increased dealings between processors and retailers.

One major problem in the Texas fish business, Pace said, is what he called the "Gypsy Peddler," who pays 5 to 10 cents a pound more to the fisherman and sells to the retailer for less.

Pace said these Gypsy peddlers have no boats, no overhead, few sanitary facilities, pay no taxes and are not inspected by health officials.

Another speaker at the Seafood Symposium Tuesday was Harold B. Allen, deputy regional director of the National Marine Fisheries Service of the Southeast United States.

Allen said that Texas finfishermen should open their eyes to the face of the nation's protein shortages.

In relation to foreign, primarily Cuban competition on the high seas off Texas coasts. Allen urged fishermen to "stay competitive."

"Get organized," he said, "let your voice be heard. Get Gulfwide efforts going."

The symposium was conducted at the Holiday Inn, Emerald Beach in Corpus Christi, and sponsored by the Center for Marine Resources and the Sea Grant College Program of Texas A&M University.

Dr. Samuel M. Gillespie of the Department of Marketing at Texas A&M University, directed the symposium.

Those from Galveston present as members of the symposium were Paul Fulham of the National Marine Fisheries Service; Joel Kirkpatrick of the Galveston Daily News; Dr. James McCloy of the Moody College of Marine Sciences and Maritime Resources; John Mehos of Liberty Fish & Oyster Co.; and Robert F. Temple of the National Marine Fisheries Service in Galveston.

There were representatives from the legislature from the state health department, from banks, state government, federal government, fishing industries, and out of state colleges.

U. S. Rep. Bob Eckhardt, D-Tex., member of the U. S. Merchant Marine and Fisheries Committee, flew to Corpus Christi Tuesday morning and made a brief presentation on the capital value of bay and estuarine areas.—JOEL KIRKPATRICK, The Galveston Daily News, Aug. 15, 1973.

Speakers Ask National Attention

CORPUS CHRISTI, Texas

A recent symposium here to assess the Texas seafood industry rapidly became broader in scope as speakers called for national and international attention to fishery problems.

Dr. Roy E. Martin, director of science and technology for National Fisheries Institute, in Washington, D. C., appeared early in the two-day session and quickly charged the federal government with failure to develop and support national ocean policy which would enable U. S. fishermen to meet increasing consumer demands and competition from foreign fleets.

Other nationally-oriented speakers in the two-day program were Harold B. Allen and Bob E. Finley of National Marine Fisheries Service. Allen, of St. Petersburg, Florida, is deputy director of the service's southeast region. Finley, chief of consumer education, is based in Chicago.

Slightly more localized views were expressed by two Texas seafood dealers, John Mehos of Galveston, and Pat Pace of Brownsville, Terry Leary, chief of the coastal fisheries division of Texas Parks and Wildlife Department, presented an overview of Texas fisheries and Dr. Robert C. Stephenson, director of the Texas A&M University Center for Marine Resources and the Sea Grant College Program, sponsors of the symposium, discussed Sea Grant's role as an interface between industry and the education and research establishment.

The 50-member group taking part in the symposium included State Representatives Fred Agnich of Dallas, Leroy Wieting of Portland, and Greg Montoya of Elsa; Port Arthur Mayor Lyle Vickers; and Congressman Bob Eckhardt of Houston, a member of the house merchant marine and fisheries committee.

The meeting was coordinated by Dr. Samuel Gillespie, a Texas A&M marketing professor who has worked on a number of Sea Grant-support programs for improving seafood merchandising.

NEW POLICIES

Martin, speaking for the seafood industry's largest trade association, declared that "without new policies regarding vessels, gear and resource management, we shall continue this nation's slow but steady decline in domestic fishery activity."

Calling for worldwide management of fishery resources, Martin warned that ocean productivity is limited. He said the present worldwide catch of approximately 75 million metric tons per year is three times the harvest 30 years ago and that a maximum suitable yield of about 100 million tons could be reached in as few as 10 to 12 years.

"Until we get basic agreement on the management of all stocks, worldwide, we will not have faced the real problem—management of fishery resources is the key," he said.

In reviewing a series of other industry concerns, Martin said fishermen should be permitted to give more palatable names to certain species.

"Give products like cancer fish, croaker and dog fish more salable names and move them into the market. We have passed the point in our need for protein where we can afford to play games over names," he said.

Martin also advocated a "catch-all concept" of fishing where all incidentally caught fish of suitable size would be landed, processed through a flesh separator and sold as blocks, shapes and portions. The practice could mean a 20 percent increase in yield, he said.

TEXAS VIEW

Leary concurred in the need for coordinated management of fishery stocks and said that problems of conflicting regulations in Texas are slowly being resolved through legislation. He spoke also of the need for multiple-use management to protect the interests of both sports and commercial fishermen.

Leary pointed out that fishery stocks may fluctuate widely due to natural and manmade causes such as floods, droughts, pollution, and freshwater diversion.

"We can't alter natural processes but there are many ways fishery regulations can be altered to help the industry, he said.

Mehos, vice president of Liberty Fish and Oyster Co. of Galveston, gave his view of the Texas shrimping industry and warned against over-equipping to harvest a limited resource.

Mehos said the industry rush to supply vessels instead of facing up to rising costs and the drop-off in catches can lead to too many boats for the resource size, gradually driving the fishery to extinction.

Mehos also minimized the possibility of shrimp fishermen supplementing their income by the sale of so-called "trash fish" caught incidental to the shrimp harvest.

He said current economics prevent the keeping of these fish and that if under-utilized species are fished for, it will be outside the shrimp industry.

Pace, owner of Pace Fish Co. and a director of the National Fisheries Institute, opened his overview of the Texas finfish business with the lament that "Texans don't eat fish." The Brownsville dealer says he markets 60 percent of his products out of state.

Pace ripped the Texas industry's fish handling and marketing practices.

He said that handling procedures are generally poor from the fishing boat to the dealer's display case. "Proper sanitation is seldom encountered—our industry literally stinks," he charged.

Pace also said the industry's multi-step marketing chain should be streamlined and he predicted the gradual elimination of wholesale fish houses and increased dealings between processors and retailers.

In a luncheon speech to the 50 symposiasts, Finley seconded calls for increased promotion and maintained that seafood has all the attributes sought by modern consumers.

"Seafood offers convenience, variety, excitement, and high food value and it should be extremely important to the one out of every three people who is on a diet of some kind," Finley said.

Allen, tasked with summarizing a case study exercise conducted during the symposium, also challenged fishermen to "stay competitive" against foreign competition on the seas and to look for expanded opportunities in the current protein shortage.

The case study, an analysis of a small oyster harvesting and marketing firm, was developed by researchers at Virginia Polytechnic Institute.

The study was used at Corpus Christi to acquaint symposium participants with industry problems. It was presented by Dr. Charles Coale, Jr., and Dr. Donald Long of VPI.—BOB BUNTING, Department of Marine Resources Information, Center for Marine Resources, Texas A&M University.

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