

CARIBBEAN AND GENERAL SESSION

FRIDAY—NOVEMBER 21

Chairman—RICHARD T. WHITELEATHER, *Assistant Regional Director, U. S. Fish and Wildlife Service, St. Petersburg Beach, Florida*

The Recreational Potential of Marine Fisheries

DANIEL H. JANZEN

*Director, Bureau of Sport Fisheries and Wildlife
Washington, D.C.*

UNTIL TWO YEARS AGO I was a midwesterner, and water—to me—was for drinking, for raising ducks, and for trying to get carp out of or put trout in. Of course, I knew there was salt water for sailors and sailfish, and for swimming, but it didn't mean much to me. The region for which I was responsible before coming to Washington was the only one in the Service that nowhere touched salt water.

But there has been a change. The move from Minnesota to the tidewaters of the Chesapeake Bay couldn't help but arouse my interest in what Henry Lyman, editor of the *Salt Water Sportsman*, calls the "Growing Giant"—marine sport fishing. And this interest was much more than professional. Having spent most of my vacation time in the last fifteen years fishing in the best fishing waters of the Middle West, I naturally did a little exploring when I moved east, and I liked what I found. I have a hunch that my future fishing vacations—and what is a vacation without fishing—will be on salt water.

The beginning of salt water angling for pleasure is lost in antiquity, but it must have begun about the time someone got enough food ahead so he didn't have to fish. He just went out and fished for the fun of it. Back in the 1890's when the U. S. Fish Commission's scientific expedition took the first *Albatross* into the Pacific islands, they found some of the natives fishing patiently for hours with hook and line, apparently because they liked it, for they also had fish traps and nets. The accounts of the scientists themselves, though somewhat restrained, sometimes sound as though some of their "collecting of specimens" with hook and line was as much fun as duty.

Large-scale salt water angling doesn't have a very long recorded history even in the United States where it is probably more important than any place else in the world. Just ten years ago a couple of biologists who surveyed the sport fishery of the Middle Atlantic bight said in their report that "twenty years ago there were practically no facilities for ocean sport fishing"—and this in the most densely populated section of our country. During that twenty years previous to 1948, a fleet of about 1,000 charter and party boats had been built up in the New York City, Long Island, and New Jersey area. Since that time the number of boats, trailers, and outboard motors sold in that area, and for that matter all over the United States, is hard to believe.

I don't propose to quote a lot of figures to you about the investments in boats and facilities, numbers of fishermen, or isolated catch statistics. The ones I have seen are large and growing, and of course none are more impressive than right here in Florida. Rather than figures I should like to talk a little about marine

fisheries research and whether we know enough about marine fisheries biology to do a good job of recreational fisheries management.

As a starting point I looked over Bigelow and Welsh's classic "Fishes of the Gulf of Maine," published in 1925. The book contains a wealth of drawings and material on description of the fish, including color and size; general range; habits; food; breeding; and importance. But the phrases "Little is known . . ." or "Nothing is known . . ." or "No definite information is available . . ." are common throughout, even for fish like mackerel, bluefish, striped bass, tunas, swordfish and sea trouts. So then I turned to the 1953 edition, completely revised and with much new material. It was good to read such phrases as "It has been learned since the first edition that . . ." and "recent observations have shown . . ." but still for many of the most important marine gamefishes "little or nothing is known" still about such basics as rates of growth, migrations, maturity and spawning, relative abundance, fluctuations. If we in the Bureau of Sport Fisheries and Wildlife knew as little about ducks and geese—where they winter, what routes they travel and when, we'd be in truly bad shape. And yet the crying need in the field of migratory bird management is for more basic knowledge. Most of our troubles in this field—and we have some serious ones—stem directly from the fact that we still don't have the right answers or enough of them.

I am informed that in the past few years some important contributions have been made to our knowledge about striped bass, that much publicized fish of the Atlantic coast and San Francisco Bay, and about shad, sailfish and swordfish, but I don't think the full recreational potential of the marine fishes can begin to be realized until we know much more about the fishes which we, as fishermen, want to catch. Marine problems, to me, seem much more difficult to solve than those found in fresh water, but certainly the answers are there if we will but expend the effort to find them. It is a vast area we are dealing with. Many people have a feeling that you can't do much about the sea or the fish in the sea to improve fishing. Conservation and management of mixed fisheries involving many species is very complicated. Untangling the web of action and interaction in the big, dynamic sea is going to be tough. Migratory species which ignore the territorial limits of the states or even of the United States make rational management a real problem for the individual state. And oceanic research is expensive.

I think I have detected a certain widespread complacency on the part of salt water anglers and some biologists and administrators. This is understandable, if not acceptable. No license to buy, no seasons or creel limits or restrictions on tackle or bait or places to fish or sizes of fish to keep! All the fun and no responsibility! Where else is such freedom possible? And then when fishing isn't so good in a favorite spot, there are plenty of scapegoats—pollution is always a good one, but blaming the commercial fishermen for tearing up the bottom, catching baby gamefish or catching too much of everything is very popular, too.

The concept of the inexhaustibility of resources has been pretty thoroughly exploded during this century in the United States. The pioneers and early settlers apparently thought there was so much of everything that the idea of husbanding what they found here never entered their heads until they were faced with actual demonstration that resources have limits. I cannot understand how, having rediscovered this truth and having accepted the philosophy of conservation, we can be passive about our ignorance. We ought to demand facts as a

substitute for emotions and be ready to discard preconceptions when we have the facts. We ought to be willing to let tradition go by the board when we find something better.

A fishery biologist a few years ago said that our idea of the sea as the frontier is really the boundary between knowledge and ignorance. Ignorance in the past has led to many unnecessary arbitrary restrictions and regulations governing fresh-water fisheries. Many are still on the statute books; ignorance in the future can do the same for marine fisheries, especially near the shores.

I don't like to keep on harping on this theme of ignorance but we are going to have to get more answers and get them soon. This marine fishery recreational industry is growing like a walleye in a minnow pond. Population pressures and shrinking of inland fishing opportunities are pushing people to the coasts for recreation. Eighty-five million, or half of our human population, live within the states bordering on salt water. The big new highway program makes it easier and quicker for them to get there. Even in the Middle West there is an ambitious program to build a superhighway down the Mississippi River from Minnesota to the Gulf; this sort of thing will be fine for the business end of marine sport fishing, but no business is in good shape without continuing inventories and protection of the sources and supply of raw material.

In September, the Atlantic States Marine Fisheries Commission, representing all the fifteen coastal States, issued a supplement to its annual report entitled "Important Fisheries of the Atlantic Coast." This is a summary of knowledge about twenty-three important species of migratory fish, and importance is determined from statistics of pounds landed by commercial fishermen and the price paid the fishermen for them. Many of the species described are probably as important, perhaps more so, for angling. Many of the important game fish like tunas, tarpon, sailfish, marlin, snappers, snook, and others are not listed at all.

In the supplement I read that sport fishing is gaining in popularity along the Atlantic coast, but the total catch and value of the sport fishery is unknown. I noted that almost nothing is known of the biology of the king and Spanish mackerels. The biologists point out that the croaker is notably erratic, fluctuating between periods of scarcity and plenty. They say large numbers of small grey sea trout are killed in trawls, pound nets and seines and this *may* be an obstacle to the well-being of the fishery. Very little is known about scup and the same story goes for bluefish. Even for striped bass they say "information is by no means complete."

A little stock taking shows that sea fishes are characteristically unstable in abundance but that their fluctuations, though probably predictable, are unpredictable. We see that not even the barest statistics of angler catch are collected except in a few isolated and special places. Apparently there is no reasonable basis for comparing commercial and sport catches or values, much less for evaluating the impact of all fishing on the populations. A great deal is being said nowadays about the remodeling of the inshore areas by real estate promoters, channel dredgers, and others, and about the huge quantities of agricultural chemicals which are being spread about and draining off into the estuarine waters. But there really isn't very much to go on so far as documentation of estuarine use and dependence by gamefish and their tolerance to anything from mild to drastic changes.

I'm not singing this tune over and over to suggest that we need more knowledge to regulate and restrict. Rather, we need it so that we can make wise de-

cisions about management. I'm an optimist by nature, so I'm not trying to scare or suggest doom and depletion—just urging the very widest possible understanding of our present situation in relation to a very big resource.

It has been fascinating to watch the development of the big deep sea fishing rodeos which have become traditional in many ports. Thousands of people from sub-teens to octogenarians bring in everything from three-pound bluefish to 460-pound marlins and have a wonderful time doing it. I think these suggest at least what the recreation potential is: it is many more thousands of anglers of both sexes and all ages, fishing out of every coastal port, renting small boats or chartering large ones or boarding party boats, bringing in their own rigs on trailers and needing launching ramps, food, lodging, fuel, bait, gear, and services in astonishingly increasing quantities. It is greater and greater pressure on the fish populations. It means more, not less, competition with commercial fishermen for fish, for space to fish, and for shore services. It means more need for wise conservation policies and constructive management activities. It means more expenditures of money in the coastal communities and it means more expenditures by conservation agencies.

—And that last statement naturally leads into the matter of license revenue from salt water anglers. I know how controversial this subject is, but I rather believe that most anglers would not oppose a reasonably-priced license if they could be shown how they would benefit. What are some of these benefits? Licensing would make the collection of catch statistics easier and these are important to biologists and conservationists, but the sportsman will have to be shown how these data will benefit him. The Sport Fishing Institute has assembled some illustrations of how useful construction of artificial fishing banks has been in a few areas. Other salt water fishing services which only public agencies can provide for everyone will have to come from revenue—and I suspect it will have to come from revenue provided by the salt water angler. Research and action programs for the prevention, control or abatement of pollution, including the new hazard to fish and fishermen of radioactive waste disposal at sea, will be increasingly important to salt water anglers. Research on the effect of the rapidly expanding chemical pesticide program on our estuarine spawning grounds may become all important. Research to define good fishing grounds, to explain and predict fluctuations in abundance and distribution of important species from year to year and place to place, to divert fishing intelligently to other species and other areas when abundance or availability are low, and to formulate rational conservation measures when they become necessary. And I probably don't have to add that research on a scale necessary to produce useful and full information is likely to be very expensive. I have said enough about licensing at this time but the money is going to have to come from somewhere. We are going to have to have the answers if the marine recreational fishery is to be properly managed, and this nation cannot afford to have it mismanaged. We have here an opportunity to profit from past mistakes in inland fishery management. The crime is not in making mistakes but in the failure to learn thereby.

In closing, I want to refer back to the title of this paper, "The Recreational Potential of Marine Fisheries." What does it mean? It means many things to many people. It is wholesome use of leisure time for hordes of harassed Americans wearied by the too-fast pace of modern living and world tensions. It is an economic heaven-on-earth for manufacturing and service industries. It is a

challenge to conservationists and researchers, and it is a challenge that must be met.

Canning Tuna in Puerto Rico

ROLF JUHL

*Fleet Operations Manager, Van Camp Seafoods Co., Inc.
Ponce, P.R.*

THE CALIFORNIA TUNA INDUSTRY dates back to 1903 when failure of the pilchard fishery inspired a resourceful packer to try packing albacore in an effort to keep the cannery in operation. After a few years of experimentation the new white meat tuna pack received acceptance and by 1914 over 200,000 cases reached the consumers' market. In 1915 canneries had started canning skipjack, yellowfin and bluefin.

The tuna fleet kept abreast of the growing demand for this new fish product and changed from the small forty to sixty feet ice boats to the present modern clippers with capacities up to 600 tons and cruising ranges of 10,000 miles.

Over the years the tuna industry went through various upheavals and reverses. The first and second World Wars helped to increase the domestic production from 200,000 in 1914 to 1,000,000 cases after the former war and from 4,000,000 to 6,000,000 after the latter. The present domestic catches have stabilized around 300,000,000 pounds per year yielding from forty to forty-five million dollars to the fishermen.

Most of the larger canners of the West Coast combined tuna and pilchards as the production mainstay. In 1952-53, when the California sardine fishery collapsed, many of the West Coast canneries could not survive on tuna alone. Many packers closed their doors and others moved their operation to more favorable locations. This decentralization opened canneries in Peru, Ecuador, Puerto Rico, and in remote Samoa. The Puerto Rican cannery commenced production during the later part of 1953, and has always depended on the clipper fleet for its fish. The lack of market outlets, limited fishing fleet and other factors made it an unprofitable venture for the original owners, and in 1956 was sold to Van Camp Sea Food Company of California.

The National Packing Company cannery, located in Ponce, Puerto Rico, has several advantages over stateside canneries. It affords a closer market to the East Coast of the United States than California, cheaper labor, lower freight rates by sea as compared to rail freight across the United States, tax exemption grant under the Puerto Rico Industrial Development plan and shorter distance from the Eastern Central Pacific fishing grounds to Puerto Rico through the Panama Canal than to California and North Western ports. Conversely, the disadvantages in having a cannery in a practically isolated geographic area include lack of trained personnel, lack of services and supplies for a new industry, poor harbor and docking facilities for the tuna clippers, hazardous ocean crossing of the Caribbean, and reluctance of experienced key administrators and technicians to take jobs in another country.

Since its inception in 1953, National Packing Company has increased its daily production in Ponce from 15 to 100 tons and lengthened the yearly packing period from six to nine months. When Van Camp took over the plant major