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Chairman—SETON THOMPSON, *Regional Director, Bureau of Commercial Fisheries, St. Petersburg Beach, Florida*

The Role Of International Commissions In World Fisheries

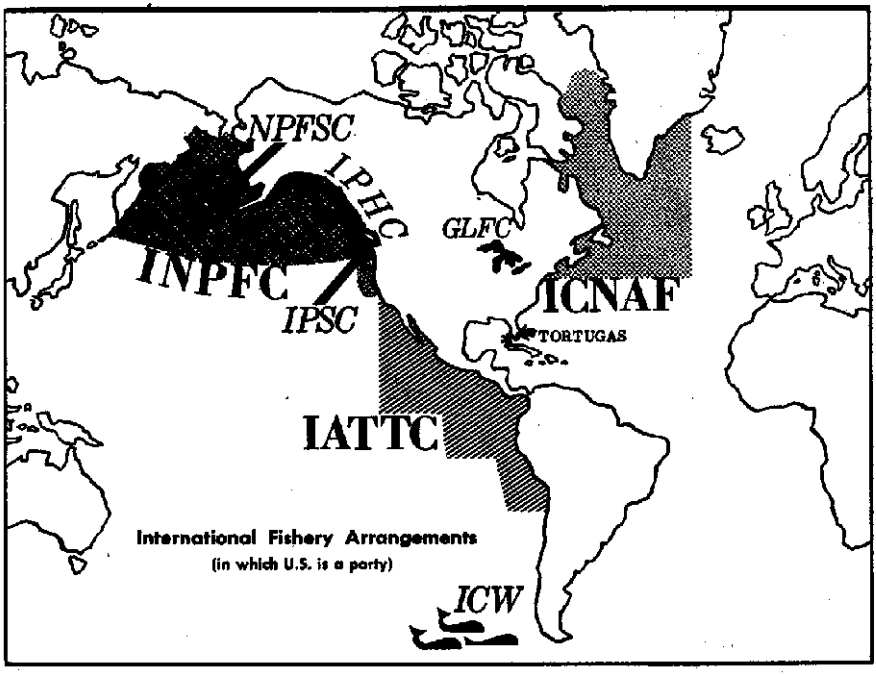
DONALD L. MCKERNAN
U.S. Bureau of Commercial Fisheries
Washington, D.C.

INTRODUCTION

THE UNITED STATES has been participating in international treaties involving fisheries since the Treaty of Versailles in 1783. Since that time, this Nation has entered into nine special international fisheries conventions. The purpose of these conventions has been to resolve fishery conservation problems between the United States and one or more other countries. Fishery problems involving stocks of fish of common concern to the fishermen of two or more nations are complex in nature and they involve not only the conservation of the species in a very broad sense but also political and economic problems, and sometimes problems of special jurisdiction beyond the territorial limits of the countries involved. Nevertheless, the international fishery convention is a common means of approaching these problems, and in the future, as the nations of the world develop a need for protein, the living resources of the sea will be harvested by a greater number of nations and to a greater extent. Thus, problems between coastal and fishing nations of the world can be expected to increase, and it must be anticipated that additional special fisheries conventions will be formed to resolve these problems. For this reason, it is appropriate to examine the international fisheries convention as a means of dealing with these international problems and to examine to what extent they have brought about lasting solutions to some of these problems in the past.

International fishery problems arise from several sources. Essentially, however, these problems are brought about because of the competition on the fishing grounds for the harvest of the limited resourses from a common stock, or common stocks, of fish. For example, the fishing countries of Northern Europe have competed with one another on common fishing grounds for centuries. Several kinds of international commissions have arisen in the Northern Hemisphere to overcome this problem.

In the Northwest Atlantic, where fishermen from over 12 nations fish the Grand Banks and great Continental Shelf of the Northwest Atlantic adjacent to Canada and the United States, the Northwest Atlantic Fisheries Commission is an example of an attempt to resolve fishing problems brought about by the fishermen of many nations fishing common grounds. Probably, however, the greatest success seen from the use of an international fisheries commission as a means of resolving fishing problems between countries are the examples of commissions established to resolve special fishery problems in the Eastern



International Fishery Arrangements
(in which U.S. is a party)

Pacific Ocean where several countries fishing common fishing grounds in tropical and temperate Pacific waters have developed bilateral and multilateral fishery conventions. Several of these have been unusually successful in providing higher sustainable yields from the fisheries and greater stability in the fishing industries dependent upon these resources. The International Whaling Commission, formed in 1930, in which there has been participation by about 17 nations, is another example of nations of the world attempting to resolve conservation and economic problems through a multilateral form of international fishery convention.

Objectives and responsibilities vary among these various conventions, and some have been very successful while others have not achieved notable success in fully meeting the complex problems for which they were formed.

If one is to understand the background leading to international fishery problems, one must recognize the increasing competition between countries for the fishery resources of the ocean. The present world catch of fish is in the neighborhood of 40 millions of tons of raw fisheries products, the bulk of which is taken in the Northern Hemisphere.

The fishing nations of the world in recent years have expanded their high-seas fishing fleets manyfold, and distant-water fishing fleets of several of the major fishing countries fish all major oceans of the world. The increase in high-seas fishing with technological advances in navigational and fishing techniques has drawn these fleets into competition with one another to an increasing extent at places on the high seas where the productivity is especially great.

For example for centuries the Northern European countries have been fishing the Grand Banks of the Northwest Atlantic. Our country, of course, was also an early participant in the harvest of these fisheries, and historians have recognized that one of the major reasons for settling the New World was the unusual occurrence of fish off the coast of Northeastern United States. Since that time, great developments have taken place in the fishery harvest in this area, and within the past few years several countries, such as the U.S.S.R., Japan, and Poland, have either started fishing in the Northwest Atlantic or have indicated a great interest in these fishing areas. Recent problems arising from the fishing activities of various countries around the shores of Iceland (i.e., the "Codfish War") have pointed up the importance of resolving international problems involving the conservation of the resources of the sea. Iceland, solely dependent upon fishing for her national economy, has become greatly concerned about the reduction of fishing for the groundfish resources adjacent to her shores. Her unilateral steps in expanding the jurisdiction over the waters adjacent to her coast has brought into sharp focus the kind of conflict arising between coastal and fishing nations of the world not only in the North Atlantic but elsewhere on most of the world's major fishing grounds.

Table I. World catch and principal countries, 1957, 1958, and 1959

	1957	1958	1959
		(In metric tons)	
World catch	30,830,000	32,100,000	35,330,000
Principal countries:			
Japan	5,399,000	5,505,000	5,875,000
China (mainland)	3,120,000	4,060,000	5,020,000
United States	2,754,900	2,703,600	2,889,700
U.S.S.R.	2,531,000	2,621,000	2,756,000

Source: FAO 1959 Yearbook of Fishery Statistics.

Japan, who before the war fished mainly in the Western Pacific Ocean adjacent to the shores of Asia and around the tropical islands north of Australia, has now expanded her high-seas fishing fleets and is fishing great distances from her home shores. Her fleets of distant-water fishing vessels have expanded manyfold during the post-war years to the point where her fleets are fishing all parts of the Pacific Ocean — from the Bering Sea to the Antarctic. Recently, Japan's fishing fleets have entered the Atlantic and are intensively fishing off the east coast of South America and the west coast of Africa. Within the past few months Japan has indicated a great interest in the bottomfish resources of the Northwest Atlantic. We can expect that within a very short time she will join other fishing nations of the world fishing the Grand Banks of the Atlantic off the shores of North America.

The Soviet Union is becoming a major fishing nation of the world, and has nearly equaled the United States in total catch. The U.S.S.R. is determined to become the major world fishing power and, indeed, she is well along the way to accomplishing this objective. Her fleets have expanded enormously within the last 5 years, and at the present time the Soviet fishing fleet is, on the whole, the most modern fleet in the world. In the years between 1948 and

1956 the Soviet fishing fleet increased nearly fourfold. She has expanded her high-seas fishing through the use of large factory ships, modern trawlers, and seiners of large tonnage into the Eastern Bering Sea and in the Pacific, and recently has been exploring the broad expanses of the tropical Atlantic — interested not only in the tuna fisheries but also the sardine and bottom fisheries of the tropics. Her fleets entered the Northwest Atlantic groundfish fisheries in 1956 and she is now a major fish producer in this area.

The United States itself has expanded its high-seas fishing fleets since the last war. Whereas the tuna fleet, located in Southern California, formerly fished mainly off the coast of California, and to a lesser extent off Baja California, now the United States fleet has extended its range and large vessels, carrying as much as 600 tons of tuna, are fishing far south on the high seas off the west coast of South America to the northern coast of Chile. In another recent development, American fishing firms have become interested in the potentially productive fisheries of the west coast of Africa, off the so-called "Bulge of Africa." There have been several exploratory cruises by American fishing boats in this area, and we may expect the development of an American fishery here within the next few years.

The United States shrimp fishery is composed of over 4,000 vessels over five net tons and about 3,000 boats of smaller size. In recent years the United States shrimp fleet has developed fully the shrimp resources of the Gulf of Mexico. Our vessels have left our shores and have extended their fishing activities far down the eastern coast of South America in the Atlantic Ocean. At least 80 United States fishing boats are now fishing shrimp in this area. Here, again, we may expect further expansion of these fleets as the market demand for shrimp continues to increase.

These examples of expanding world fisheries on all oceans point up the problem. The fishing nations of the world are expanding their high-seas fishing fleets and are fishing to an increasing extent off the shores of other coastal nations. Not only is there direct competition for the resources of the sea, but there is an increasing need for thorough knowledge of these resources, so that the maximum sustainable yield can be achieved and the maximum sustainable harvest of the resources will not be impaired.

Fisheries Problems of International Nature

International controversy over fisheries of common concern arises from at least three different problems which often are ill-defined and even more often misunderstood. The first and most common problem is that of the conservation of the resource. Here, it is the purpose of the nations fishing on a common fishing ground or on a common resource on different fishing grounds to achieve the maximum sustainable harvest from these resources. The second obvious situation arises where intense competition between fishermen fishing a common resource reduces the profit below an economic level for the fishermen of one or more of the participating countries. And third, there are political problems which affect the relationships between nations fishing common fishing grounds. All of these problems require some mechanism for their resolution, and the various forms of international commissions have become a popular organ for this purpose within the past 50 years.

There are many examples of international fishery conventions which have followed the serious decline and, in some cases, depletion of fishery resources of common concern to several countries. The first and perhaps best known

to us involves the fur-seal resources of the North Pacific Ocean. Intensive sealing by countries bordering the North Pacific Ocean before and immediately after the turn of the last century had reduced the herd from well over one million animals, depending upon whose estimate of the herd size you wish to take, to an estimated 200,000. Obviously some arrangement between the nations killing fur seals was necessary or the resource would be destroyed. Out of this realization arose the first fur-seal convention between Japan, Russia, Great Britain (for Canada), and the United States. The convention was the result of negotiations between these four countries and went into effect in 1911, and except for a short period during the last war, there has been some kind of convention protecting the fur-seal resources of the North Pacific since that time.

The North Sea fisheries of the North Atlantic Ocean provide another example of international action in the face of a declining fish catch. Lucas (1955) states the problem of overfishing was giving concern to North European fishing countries even before 1900. Although there had been extensive research done on the effects of fishing on the stocks of fish of the North Sea, it was not until 1954 that a conservation convention became effective. Even now, it is generally agreed, the current convention falls somewhat short of the conservation measures needed to achieve the highest sustainable yield from the fishery resources of the North Sea.

Political differences arise from two or more countries fishing common stocks of fish. Many coastal nations of the world, in contrast to the old established fishing nations, such as the United States, Great Britain, and Japan, do not have modern fishing fleets and cannot compete efficiently with modern high-seas, distant-water vessels. In many instances, these coastal countries are only recently aware of the potential of the fishery resources lying off their coasts. They often have neither the trained fishermen nor the vessels to harvest these resources efficiently. Only too often many of their people suffer from protein deficiencies. They are beginning to realize the potential wealth of the sea and do not wish to have these resources either dominated nor depleted by aggressive fishermen from established fishing nations. These countries have reacted in a number of ways — the most common of which has been to expand the limit of the territorial sea or claim jurisdiction over fisheries out to varying distances, in some cases to 200 miles beyond their coastline.

Since we know so little of the resources of the sea, it is small wonder that many small nations question the ability of the fisheries resources off their coasts to withstand the intensive fishing by large modern fishing fleets of far-distant countries. The great area of our ignorance of the resources of the ocean makes the problem of resolving all kinds of differences between coastal and fishing nations more difficult. It appears that the only reasonable solution is the joint study on a broad scale of the oceans and their resources.

The economic problems involving fisheries of common concern to two or more countries are often the cause of serious difficulties between countries. For example, in the North Sea the markets of some countries prefer the harvest of groundfish of very specialized sizes, even though the rational harvest for maximum sustainable yield of this resource might suggest that the optimum size was larger and the optimum age older. However, in order to achieve this a country must give up the harvest of the sizes and kinds of fish most desirable for its market.

The problems which will arise from such a consideration can easily be seen. In fact, in the case of the bottom fisheries of the North Sea, the economic problems involved have prevented a complete solution based upon the known biological data.

The post-war history of the Antarctic whaling shows the effect of not only a lack of proper conservation by the whaling countries but also of the sharp effect of economic differences between countries. These conflicts have resulted in great reduction in the numbers of some species of whales, especially blue whales, plus increased numbers of whaling fleets. This intense competition is forcing some of the countries from the Antarctic whaling grounds. Similar economic problems are bound to arise as the resources are jointly harvested by fishermen of various nations fishing with more or less efficient fishing methods. Those fishermen who for one economic reason or another can fish the stocks on a common fishing ground to a lower level of abundance and still compete economically have a definite advantage, and unless some mechanism such as the international fisheries commission is found to overcome these conflicts, intense feeling between the fishing countries can be predicted, resulting in competitive action oftentimes detrimental not only to the fishing industries of those countries concerned but to the resources as well.

Our own early history is closely bound to the international disputes in the fisheries of the Grand Banks and Northwestern Atlantic Ocean. In the early history of the New World the disputes were between the British, including the settlers of New England, and the French. In recent times the disputes have been mostly between our country and Great Britain, including Canada. The political questions at issue have related not only to the right to take fish in waters adjacent to the land, but also the right to certain other privileges in the waters and on land. They are not all resolved yet, although the International Commission for the Northwest Atlantic Fisheries has provided a welcome forum. With these problems in mind, it seems obvious that there is an increasing need for international cooperation on a very broad scale and for organizations, whatever their form, where some of the most fundamental questions relating to the productivity of the resources of the sea and the jurisdiction and ownership of these resources can be debated.

Means for Solving International Fishery Problems

One of the most common means for a country to attempt to solve problems arising from the encroachment of foreign-flag fishing vessels has been to claim jurisdiction over a broader width of the seas adjacent to its shores. While in the past most coastal countries recognized a 3-mile territorial limit, some did not. Indeed, many coastal states have recently proclaimed jurisdiction upwards to 200 miles at sea. The most common claim beyond 3 miles has been 12 miles, claimed by Russia, many of the nations following her political philosophy, several Arab countries, and advocated by many more countries.

There have been strong political overtones to the claims of the Soviet Union and the Arab bloc, but many countries, such as Mexico, Canada, Iceland, Norway, and others, have used the extension of territorial seas and special jurisdiction over fisheries as a means of solving international fisheries conservation problems. This is not to say that in certain cases there was not a basis for the concern over the resources; quite the contrary, this is to say that unilateral action by the coastal state to either extend her territorial seas or

extend jurisdiction over fisheries has become one of the most common means towards the solution of international fisheries problems.

A great step forward in settling the general problems relating to the activities of nations on the high seas occurred during the 1958 United Nations Conference on the Law of the Sea. This conference adopted five general rules governing the activities of nations on the seas of the world. Its most significant features relate to the freedom of the seas with respect to fishing, navigation, and other matters. It also adopted conventions on fishing and conservation, defining the "Continental Shelf" and the resources of the shelf. Further, this Conference adopted rules for compulsory settlement of disputes between countries party to the conventions and dealing with matters within the scope of the conventions. Obviously this is a big step forward. For the first time the nations of the world laid down principles based upon equity by which countries could conduct themselves in harmony on the high seas.

There were, however, two matters upon which agreement could not be reached during the 1958 conference; the breadth of the territorial sea and the extent of jurisdiction over fisheries. The position of the fishing states, including the United States, was to adopt a narrow territorial sea while the coastal states, including several South American countries, were in favor of expanding the limit of the territorial sea or extending the jurisdiction over the fisheries resources, or both.

Because of a failure of the 1958 Law of the Sea Conference to reach agreement upon two vital issues, a second conference was convened in March 1960 to further consider these matters. Again no agreement was reached on the width of the territorial sea or the extent of the jurisdiction over the fisheries. However, a majority of countries was in favor of a United States-Canadian proposal which in general called for a 6-mile territorial sea and 6 miles additional jurisdiction over fisheries after a 10-year waiting period. (The rules of the Conference called for a two-thirds majority vote for adoption. This proposal finally failed by one vote.) Even though there was no final agreement concerning the width of the territorial sea nor the breadth of jurisdiction over the fisheries, the five conventions adopted at the 1958 Conference form a framework from which general agreement between countries fishing common resources can be achieved.

Another approach has achieved modest success in dealing with international fishery problems. Herrington and Kask (1956) discuss the formation and function of the Research Council and Regional Fisheries Council as a method of dealing with regional fisheries problems. These Councils were formed in the first place to exchange biological and other scientific information and to aid in the coordination of research efforts between countries fishing common stocks of fish on common fishing grounds. The best known of these early Councils was the International Council for the Exploration of the Sea, formed in 1902.

More recently, with the formation of the Indo-Pacific Fisheries Council in the Western Pacific in 1948, and another new Council, the General Council for the Mediterranean, both of which are sponsored by the Food and Agriculture Organization of the United Nations (FAO), the objectives and scope of these Councils have gradually broadened. Their purpose is not only to exchange scientific information about resources of common concern, but they stimulate joint research projects and are becoming a major force in the development of

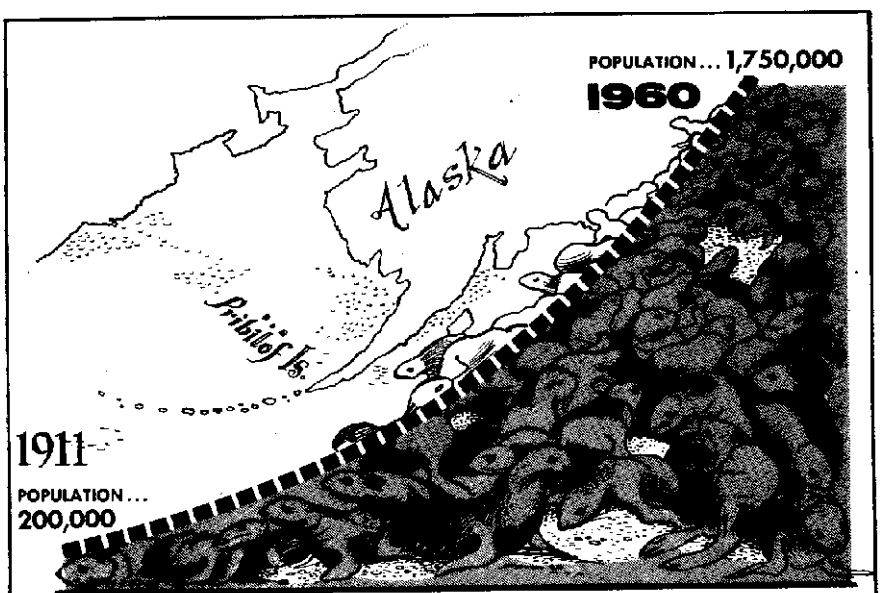
programs for expanded use of the living resources of the seas and for their proper utilization.

Of more immediate concern to the fisheries of the United States, however, has been the development of the bilateral and multilateral fishery convention wherein the objective of the convention is the conservation of certain stocks of fish of common concern to two or more countries. These conventions, unlike the Fishery Research Councils mentioned above, have specific conservation objectives and management responsibilities so that recommendations of the commissions can be readily implemented. All of the nine fisheries conventions directly involving the United States provide in one way or another for the enforcement of regulations pertinent to the fisheries with which they are concerned. Several of the recent conventions, the North Pacific Fisheries Convention (1952), North Pacific Fur Seal Convention (1957), and the Great Lakes Fisheries Convention (1955), provide for a periodic review of the Commission's progress in achieving its objectives, whether it has accomplished its goal, or whether it should be continued as is or with modifications.

Although it is not the purpose of this discussion to detail the fisheries commissions in which the United States participates (this has been done by Terry (1953), Herrington (1955), and Herrington and Kask (1956)), it is pertinent to the discussion to briefly review their current status.

The North Pacific Fur Seal Convention

The original convention between Great Britain (for Canada), Japan, U.S.S.R., and the United States was signed in 1911 after serious depletion of the herd of fur seals of the North Pacific Ocean had occurred during the latter



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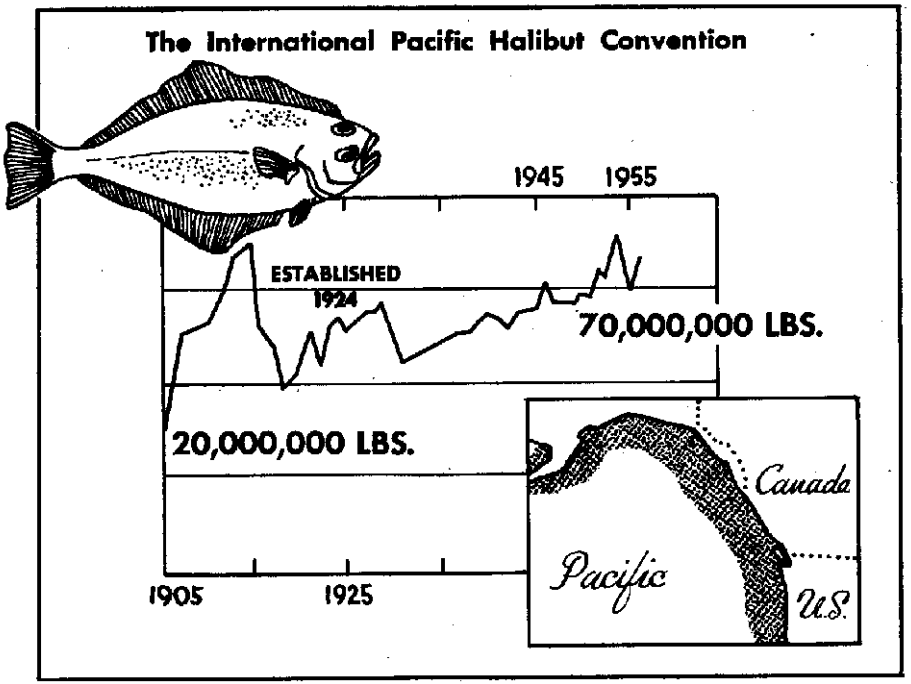


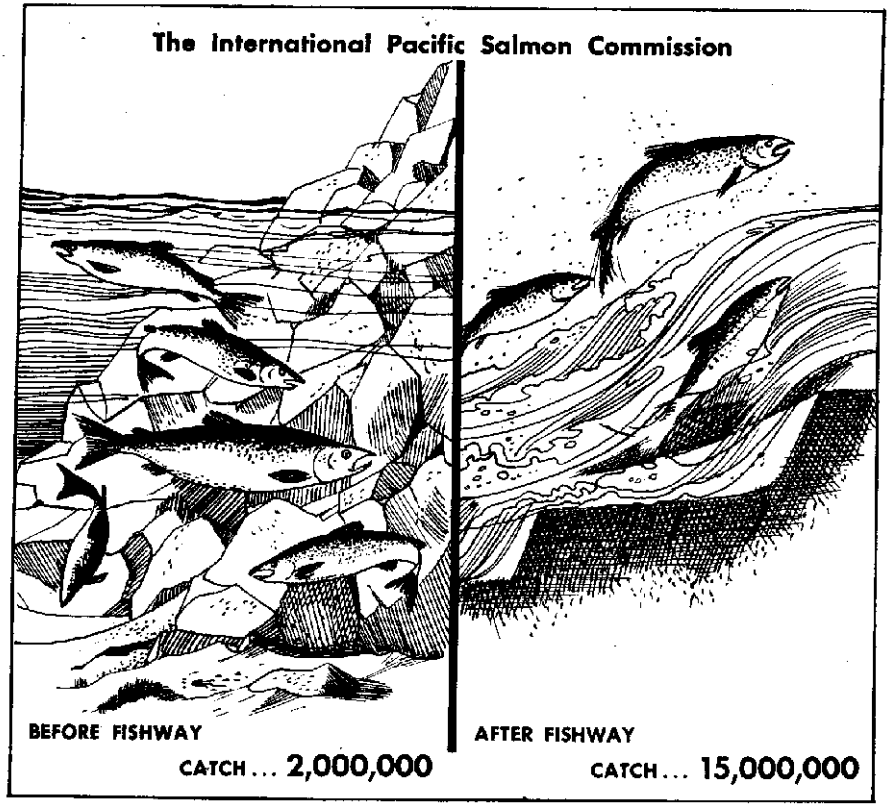
half of the 19th century. In 1941 the Convention of 1911 was terminated and it was not until February 1957 that an Interim Convention was signed. The present Convention is subject to renegotiation in 1963.

The main fur seal herd breeds in the summer on the Pribilof Islands, migrating south along the Pacific coast of North America with a portion of the herd moving south in the Western Pacific off Japan. The intensive harvesting of the seals both on the breeding islands as well as pelagically brought about the decimation of the herds near the end of the 19th century.

Since the inception of the original Convention, the Pribilof herds of fur seals have increased from an estimated 200,000 animals to about 1,750,000 animals in recent years. The harvest of fur seals was eliminated immediately after the first Convention went into effect. Recently, however, as a result of the increase in the herd, the harvest has been in the neighborhood of 60,000 animals. Biologists have estimated that the herd has grown too large and with the advice of the Commission the United States Government is seeking to reduce the total from about 1,750,000 to about 1,500,000 animals.

The International Pacific Halibut Convention

The Pacific halibut fishery became important to the United States and Canada soon after 1888 when a commercial fishery began off the northwest coast of the State of Washington. After a record catch of 69 millions of pounds in 1915, the catch dropped precipitously and remained at a low level until



well into the 1930s. Since then the catch has risen and the present catch is again in the neighborhood of 70 million pounds.

The original halibut convention entered into force in 1924 and subsequent conventions have been ratified in 1931, 1937 and 1953. The primary objective of the original convention was "to preserve and restore the Pacific halibut fishery to the peak level of production prior to the convention." At the present time the concern of the Commission is to maintain the maximum sustained yield of Pacific halibut and provide proper management to the resource.

International Pacific Salmon Commission

The Convention between the United States and Canada was signed in 1930. Its objective was to determine the cause for the decline of the Fraser River sockeye salmon runs and to find ways of restoring these runs. An intensive research program was begun in 1938, and by 1945 the construction of the Hell's Gate fishway had eliminated the barrier to the upstream migration of sockeye salmon. In recent years, after the correction of the Hell's Gate block, the objectives of the Commission have turned more to regulation and management in order to rebuild the separate races of sockeye in the Fraser River

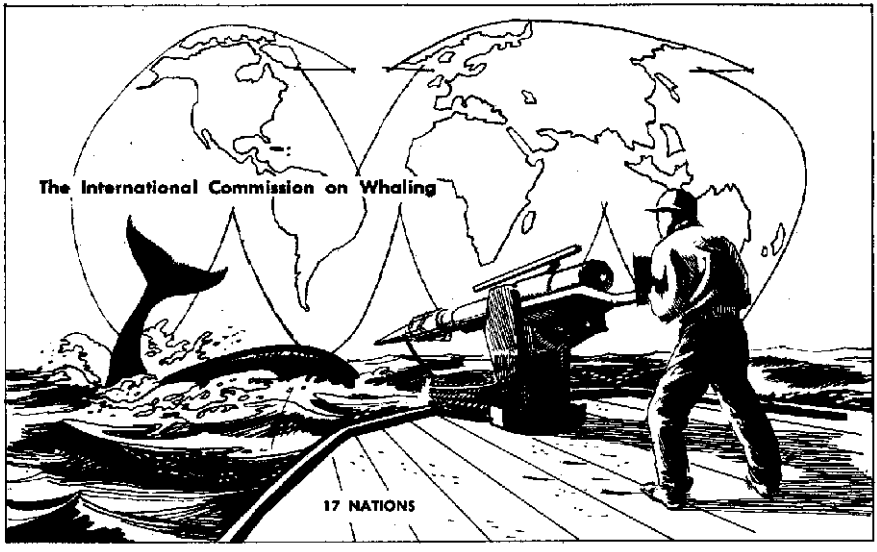
system. Prior to the occurrence of the slide at Hell's Canyon on the Fraser River, the peak annual production of salmon reached 20 million fish. After the full effects of the block were felt, the catch declined to less than 2 million fish. Current production has reached 15 million fish, almost to the high level of production of earlier years.

In 1957 the original Convention was amended to include pink salmon in the Convention area. At the present time studies are underway to determine the proper conservation measures necessary for the maximum sustainable yield of this species.

International Commission on Whaling

Whaling was carried out by New England vessels early in the history of our country. The great sperm whaling grounds along the equator in the Pacific Ocean provided large catches of whales until the late 19th century. However, the modern period of whaling began with the development of the harpoon gun and the large mechanized factoryship. The excessive and unrestricted catch of whales had so reduced the number of whales that by 1930 it was obvious to all whaling countries that some limits were needed to protect the remaining animals. A conference was held on this subject in 1930, and finally in 1937 a Convention was adopted and signed by nine of the signatory nations to the 1931 agreement. Subsequent revisions have resulted in the 1946 International Convention for the Regulation of Whaling. The first meeting of the International Whaling Commission, which arose from this Convention was held in Washington in 1949. Seventeen countries have adhered to the Convention, although at the present time several countries have withdrawn or are threatening to withdraw.

The Convention provides for recommending research programs, reviewing scientific findings, setting whaling seasons, fixing areas, limiting numbers of



whales which can be killed, and in general has broad powers of regulation and enforcement over the whaling operations of all signatory countries.

It has been a very powerful deterrent to the unrestricted harvest of whales, but because of the wide diversity of economic interests among the 17 nations involved, the Commission has not been successful in arresting the decline of some of the major whale herds, especially the blue whales of the Antarctic Ocean.

The Inter-American Tropical Tuna Commission

The tuna fishery of the west coast of the United States began at about the turn of the century and since has become one of our largest and most important fisheries. The fishery which began fishing albacore off California now ranges both north and south, catching albacore as far north as Vancouver Island in Canada and yellowfin and skipjack tuna south along the Central and South American coasts as far as Northern Chile. The growth of the fishery has been rapid and a peak catch of 390 million pounds was reached in 1950. Since then the catch has fluctuated between 250 and 300 million pounds. Apparently the catch dropped not because of a shortage of tuna, but because of an influx into the United States of large amounts of foreign-produced tuna at prices below the cost of production of the American fleet.

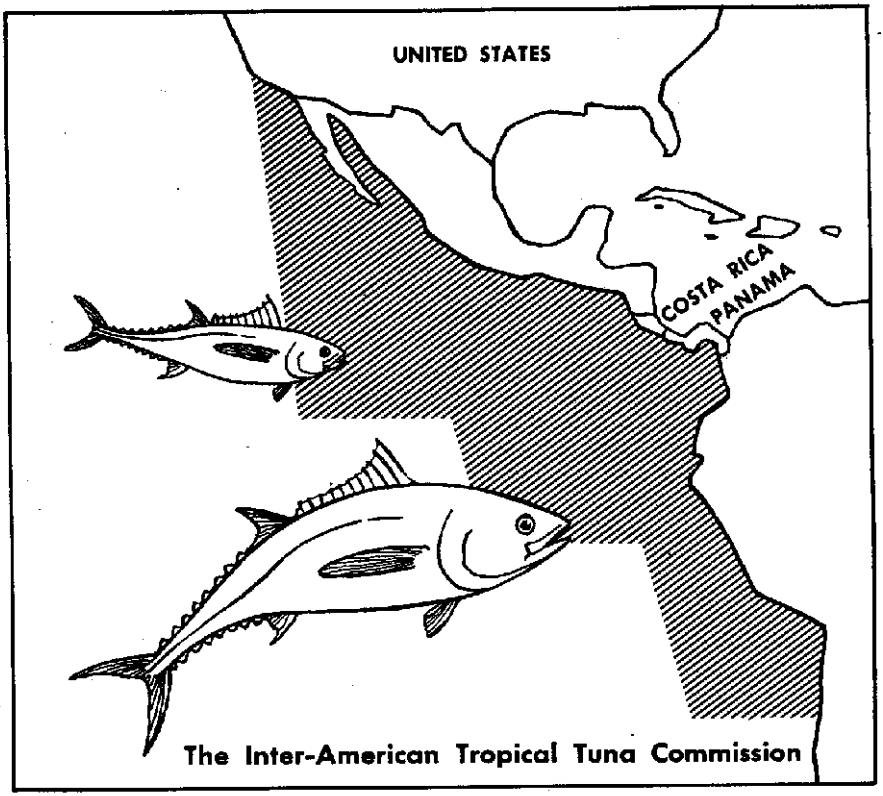
The very rapid rise in fishing for yellowfin and skipjack in the eastern tropical Pacific caused the United States and several of our neighboring countries to the south to voice concern about the conservation of these stocks of tuna. As a result of this concern, there was negotiated in 1949, and ratified in 1950, a Convention between Costa Rica and the United States which established the Inter-American Tropical Tuna Commission. The objective of this Commission is to "gather and interpret factual information in order to facilitate the maintenance of populations of yellowfin and skipjack tunas, and other kinds of fishes taken by tuna fishing vessels in the Eastern Pacific Ocean, at a level which will permit maximum sustained catches year after year." (Shaefer, 1955). The Commission is directed to undertake necessary scientific investigations for this purpose and, on the basis of these investigations, to recommend proposals for joint action.

The Commission began its investigations in 1951 and has made great advances in the knowledge of the tunas of the tropical Eastern Pacific. There can be little question but that it has been successful in ascertaining the level of abundance of yellowfin tuna and estimating its optimum yield. The Commission also has successfully predicted that the fishing effort on skipjack tuna is well below the level which will produce the maximum sustainable catch of that species.

International Commission for the Northwest Atlantic Fisheries

The fishing banks given consideration under this Commission have been harvested for over 400 years. There has been some speculation that European fishermen visited and fished the Grand Banks area prior to the voyages of Columbus. It has often been stated that the Pilgrims who settled New England came to the New World to worship God and to fish.

The species which have been most actively sought from these grounds since earliest times are the codfish, haddock, halibut, and, more recently, the redfish. Other fishery products of notable importance include the pollock, whiting, hake, and scallop. Traditionally, these fishing grounds on a broad, wide



continental shelf have been considered among the most productive in the world.

Early fishery activities by several European countries, notably Portugal, France, and England, brought to focus the competitive aspect for the fishery resources of the "New World." Throughout the early history and development of North America certain concessions and agreements were established between nations desirous of utilizing the abundant marine resources available in the Northwest Atlantic Ocean. However, it was not until 1920 that representatives of Canada, Newfoundland, and the United States met in Ottawa to consider cooperative investigations of the Northwest Atlantic fishery resources. A series of informal meetings was held culminating in the formation of the "North American Council on Fishery Investigations" at Washington in 1930. This organization disbanded just prior to World War II. Through it, however, the foundations of the International Commission for the Northwest Atlantic Fisheries were established.

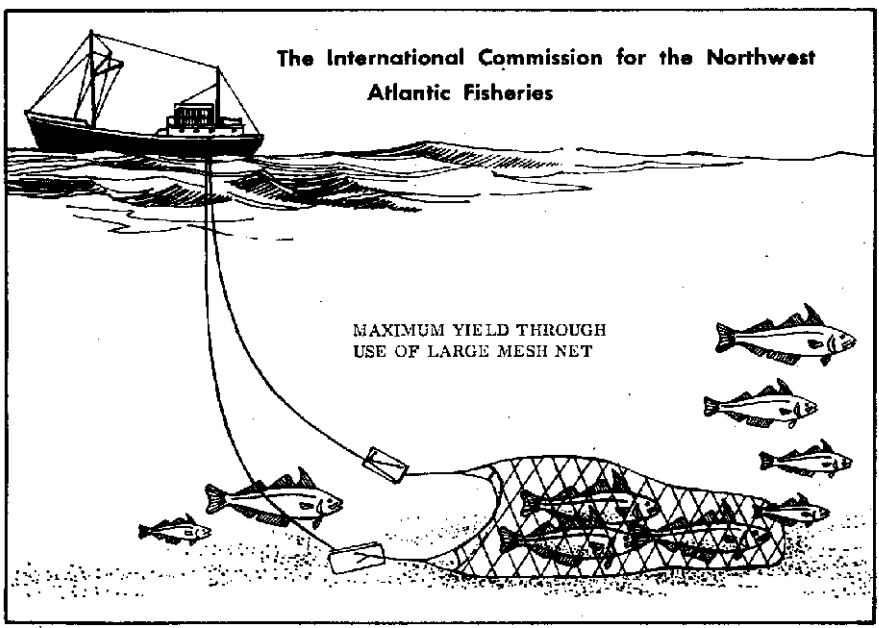
Recognition of the problem of reduced abundance and potential depletion of the fisheries of the North Atlantic prompted the convening of three international conferences in 1937, 1943, and 1946. These conferences considered problems related to the entire North Atlantic. In 1946, in line with a suggestion offered by the United States of America, the Conference decided to restrict its

consideration to the area east of 42 degrees west longitude. This decision was taken in recognition of the benefit of separating the North Atlantic into eastern and western sections for conservation purposes.

In order to consider problems affecting the fisheries of the Northwest Atlantic, a conference of 11 countries was convened at Washington in January 1949. The work of this conference resulted in the opening for signature on February 8, 1949, of the International Convention for the Northwest Atlantic Fisheries, and the Convention entered into force on July 3, 1950, after the deposit of instruments of ratification by four signatory governments, namely, Canada (including Newfoundland), Iceland, the United Kingdom, and the United States of America.

The objective of the Northwest Atlantic Fisheries Commission is to work with member governments towards achieving maximum productivity of the fisheries of the Northwest Atlantic. It does this by programming research, and collecting and arranging for the rapid exchange of scientific information between scientists of the various member governments.

The Northwest Atlantic Commission has 12 member nations, with several more nations, including Poland and Japan, either now fishing the Northwest Atlantic or seriously considering doing so. In addition to the complexity of the problems occasioned by the large number of nations engaged in the fishery, there is the additional problem of attempting to achieve the maximum yield from the fishing grounds when at least 7 major species of fish are taken in various parts of the fishery by the same kind of fishing gear. A case in point is the Atlantic halibut. Obviously, if the maximum sustainable yield of halibut



is to be achieved, then haddock will be underfished. As a result, it is likely that at the present time halibut is being overfished on Georges Bank, but a greater catch of haddock is being taken.

Even with the many complexities involved and the short time it has been in effect — 9 years — the accomplishments of this Convention are significant. Large research programs by most of the member nations are well coordinated through various panels of the Commission. In addition, mesh regulations have been adopted for two of the areas of the Northwest Atlantic and there is evidence that these conservation measures have led to increased yields of haddock.

International North Pacific Fisheries Commission

The North Pacific Commission has as its objective the conservation of the stocks of fish of the North Pacific Ocean. The Convention, between Japan, Canada, and the United States, introduced a new concept, "Abstention." This concept recognizes that the high levels of productivity maintained in some fisheries of the North Pacific are the result of long and continuous, if not perfect, conservation efforts. In view of the time, effort, and expense involved in these efforts, and recognizing that without them the stocks under consideration would not continue to produce at high levels, the Convention provides for the abstention from fishing these stocks by other member nations where it can be shown that one or more countries are fully utilizing the resource, have it under study, and under scientific management.

Under this Convention, the Japanese agreed to abstain from fishing North American halibut, salmon, and herring stocks. A provisional line was set at 175 degrees west longitude on the high seas, east of which the Japanese agreed not to fish. On the other hand, both Canada and the United States agreed to develop more thoroughly scientific proof that these stocks of fish qualified for abstention. They, with Japan, agreed to study the high-seas distribution of salmon to define areas of intermingling between salmon of Asian and North American origin, and to find a line or lines which would better divide the North American stocks of salmon from those of Asia.

The scientific accomplishments from this Convention have been substantial. The high-seas distribution of Pacific salmon is becoming well understood and the environmental factors influencing their distribution on the high seas are being discovered. Nevertheless, broad areas of disagreement remain between Japan on one hand and Canada and the United States on the other. The Japanese do not agree that Canada and the United States have proved that the stocks of fish now under abstention qualify under the terms of the Convention. Furthermore, the United States has claimed that the present temporary abstention line should be moved farther west, giving more protection to major sockeye salmon stocks of the Bering Sea, and thus better and more equitably dividing the salmon of Asian and North American origin. While disagreement remains concerning the two vital issues in Convention, a broad cooperative scientific program continues on the high seas. This program promises to provide much fundamental knowledge about the fishery resources of the North Pacific Ocean.

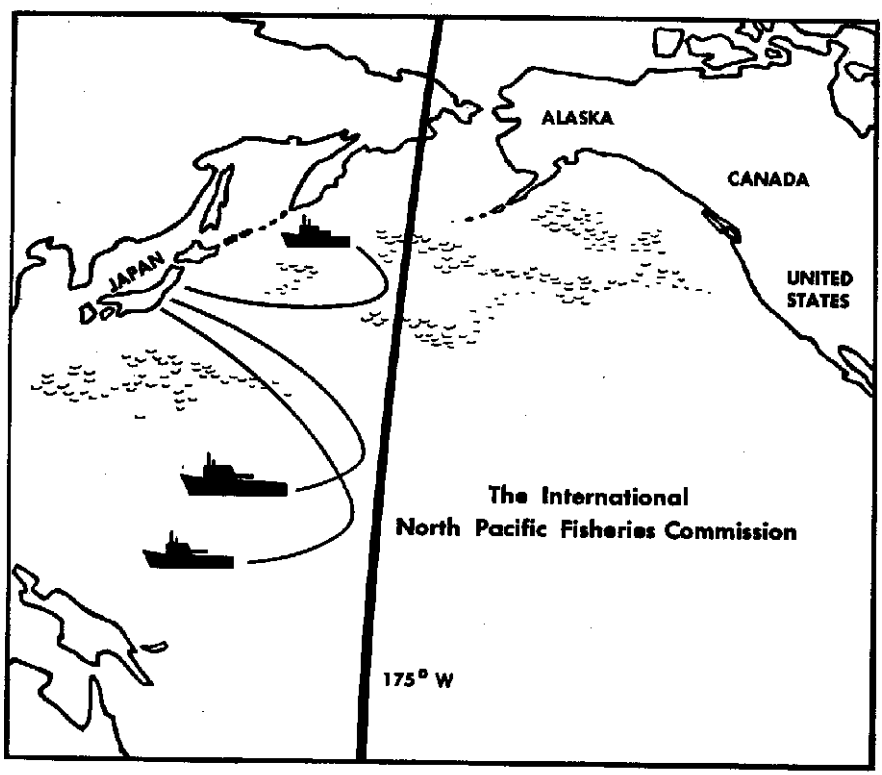
The Great Lakes Fishery Commission

Another recent fishery treaty involves the five Great Lakes bordering Canada and the United States in the midwestern area of our country. All of the Great Lakes, except Lake Michigan, are shared by the United States with Canada.

All of them, except Ontario and Huron, are shared by two or more States. With this in mind, it is apparent that it is unrealistic and indeed impractical for one State, Province, or one of the nations involved to attempt to resolve independently the fishery problems common to the area.

The most practical approach to the situation—cooperative action—was recognized as early as 1875. The first Great Lakes Interstate Conference was called together in 1883 by the Michigan Fish Commission to discuss the need for uniform fishery legislation. A series of meetings was held following the initial meeting. These resulted, in 1940, in the creation of an International Board of Inquiry for the Great Lakes Fisheries. The findings of this Board, submitted in 1942, recommended the establishment of an International Commission for the Great Lakes Fisheries. In 1946 a Convention was signed; it was not ratified by the United States however, due to the opposition of one or two States and certain fishermen groups.

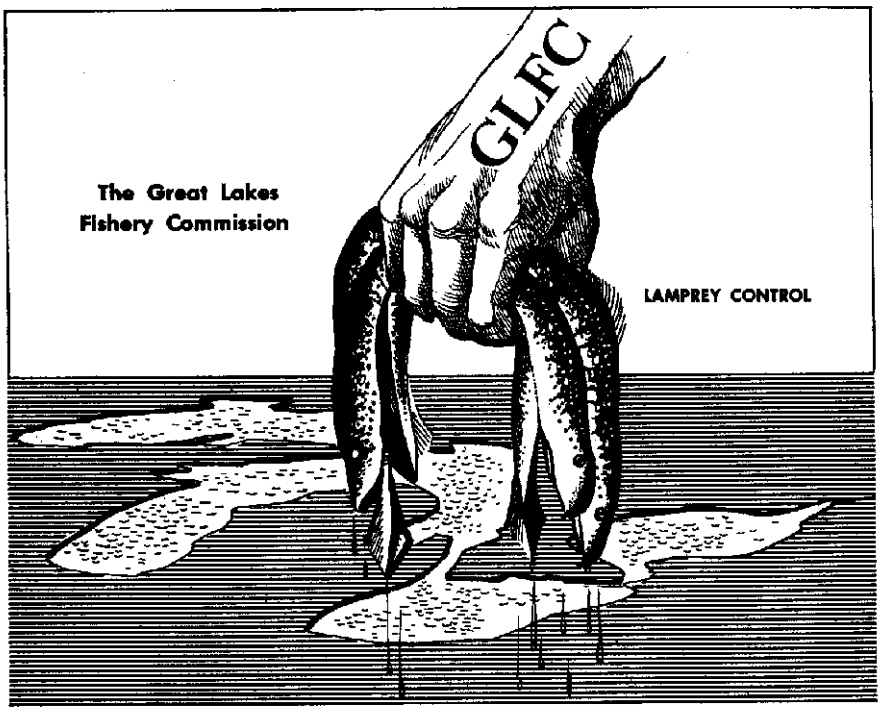
During the years following 1946 the problems of the Great Lakes fisheries became more crucial. The depredations of the sea lamprey, a parasitic predator on the lake trout, had a serious effect on the stocks of trout in some of the Lakes. It was generally recognized that cooperative action was needed. A new Convention was written in 1954, after careful consideration, in an attempt



to make the agreement acceptable to all. The Convention was ratified by both Canada and the United States in 1955.

The Great Lakes Fishery Commission was organized and the first meeting was held in April of 1956.

One of the primary tasks of the Commission is to eradicate the sea lamprey, or at least eliminate its effects upon the Great Lakes trout. Scientists of the two countries, working through the Commission, have developed the electric barrier which prevents the adult lamprey from ascending spawning streams tributary to the Lakes. Another recent and even more successful method has been developed using a larvicide or specific poison which kills the larvae in the mud of the tributary streams.



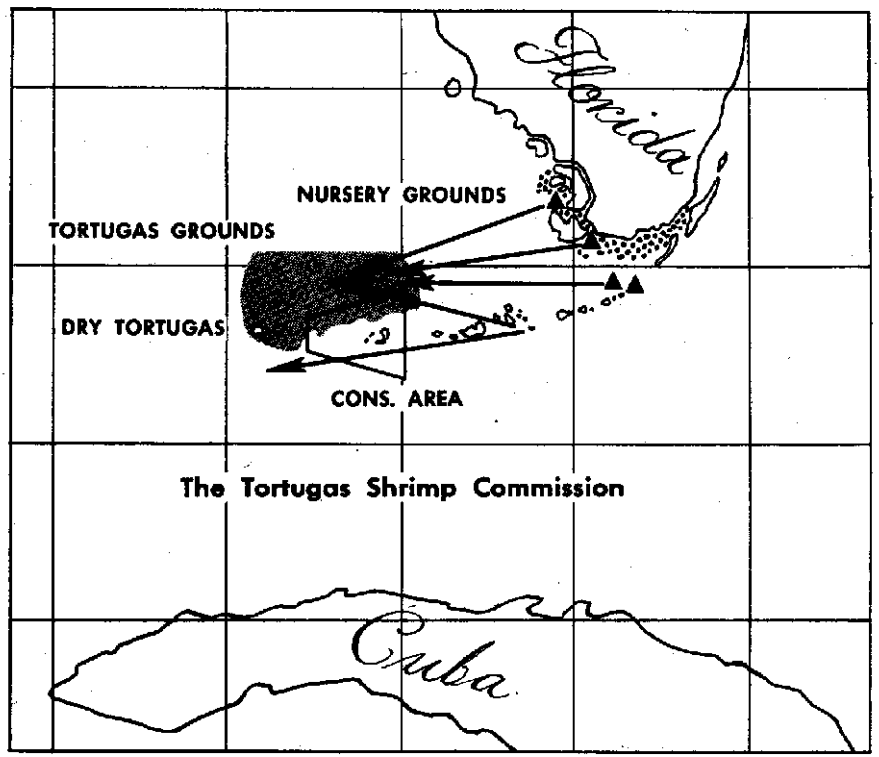
Treatment has been virtually completed in Lake Superior and plans are underway by the Commission to rehabilitate the lake trout fishery of this lake. Chemical treatment is underway in both Lake Huron and Lake Michigan to eliminate the predatory lamprey.

The Commission, as it is presently organized, also has the duties of developing research programs and, when practical, makes recommendations to the participating governments for regulations or other measures to insure sustainable yields from the fisheries of the Great Lakes. Perhaps as the Commission gains stature its functions will be more significant in the management of the

Great Lakes fisheries. Under the present Convention the Commission's authority does not extend to regulatory powers; these at present are retained by the individual States and Provinces affected.

The Tortugas Shrimp Commission

The most recent fishery Convention came into force in September 1959. This Shrimp Convention between the United States and Cuba provides a basis for study and conservation of shrimp stocks of common concern to Cuba and the United States. The implementing legislation for this Commission failed to pass the Congress during the past session. Undoubtedly, the present difficulties between the Government of Cuba and our own Government will handicap the joint efforts toward conservation of the Tortugas shrimp stocks as provided by the Convention.



The Tortugas Shrimp Commission

The shrimp fishery of the United States is our most valuable fishery. It is centered in the Gulf of Mexico, and our boats fish on stocks of common concern to Mexico and other countries bordering on the Gulf. Thus, it is of utmost importance that joint efforts in the conservation of these resources be initiated in order that the productivity of these resources not be reduced.

The present Convention is an outgrowth of fears of State and Federal

Governments, and industry officials that the pink shrimp resource of the Dry Tortugas area off the tip of Florida might be in danger of depletion.

The development of this fishery primarily by the United States shrimp fleet, but also by Cuban vessels, since 1949, has given scientists a rare opportunity to closely observe the development of a marine fishery from its inception. After the discovery of shrimp in the Tortugas area in 1949, the fishery rapidly increased. It is now producing between 15 and 20 million pounds of shrimp each year. State of Florida and industry leaders have been concerned about the conservation of the Tortugas stocks of shrimp and the Tortugas Shrimp Convention has arisen out of this concern.

GENERAL DISCUSSION

It is obvious that with the increase in fishing effort by great fishing nations of the world and the need for an inexpensive source of protein by most peoples of the world, international fisheries problems will increase. It would appear that the oceans are a logical place from which we might easily increase the world supply of protein and this fact is becoming obvious not only to the traditional fishing nations but also to the recently formed independent countries. From these observations we conclude that it is essential that there be international organizations to provide a forum in which these problems can be studied and resolved.

We have examined the various kinds of solutions which have been used by various nations. Some nations have taken unilateral action to drive competitors from fishing grounds on which they believe they had some proprietary right. These actions have taken the form mostly of extended territorial limits of coastal countries or special jurisdiction over certain fishery resources because of special location of the resource or special dependence of the people on the resource. It is concluded that unilateral action by coastal nations or by fishing nations has not been a very permanent nor satisfactory means of solving international fishing disputes.

Another method of resolving fishing disputes between nations has been through the means of the Conferences on the Law of the Sea. The 1958 Law of the Sea Conference adopted a number of Conventions which have contributed to the general problem of the ownership of resources of the high seas and freedom of the seas, but it and the subsequent 1960 Conference failed to resolve the important questions of the width of the territorial sea or the distance to sea of jurisdiction of a coastal state over the fisheries resources adjacent to its coastline. Because of these most important unresolved issues and because few nations have as yet adopted the Conventions accepted at the 1958 Conference, this method of solution to the international fishery problems seems incomplete at best and not too practical.

The regional fishery council has developed as another means of resolving certain differences between fishermen of several nations fishing common stocks of fish. These councils, originating from the Food and Agriculture Organization of the United Nations, may be an important kind of international force in resolving international fishing disputes. It is still too soon to be sure of the future of this kind of organization, but potentially it may well replace the bilateral and multilateral fishery convention as an effective means of resolving regional or world-wide disputes in fisheries.

By far the most effective means of bringing some semblance of order out of

fisheries disputes between nations has been the bilateral or multilateral fishery convention. In all instances examined here, this kind of organization has been helpful in resolving the difficult and complicated problems involved, although complete success has not yet been achieved in several cases. It would appear that for the immediate future, and until the effect of FAO-sponsored kind of regional councils has been thoroughly tested, fishery problems involving fishermen of two or more countries can best be solved by forming international fishery conventions among the countries involved.

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