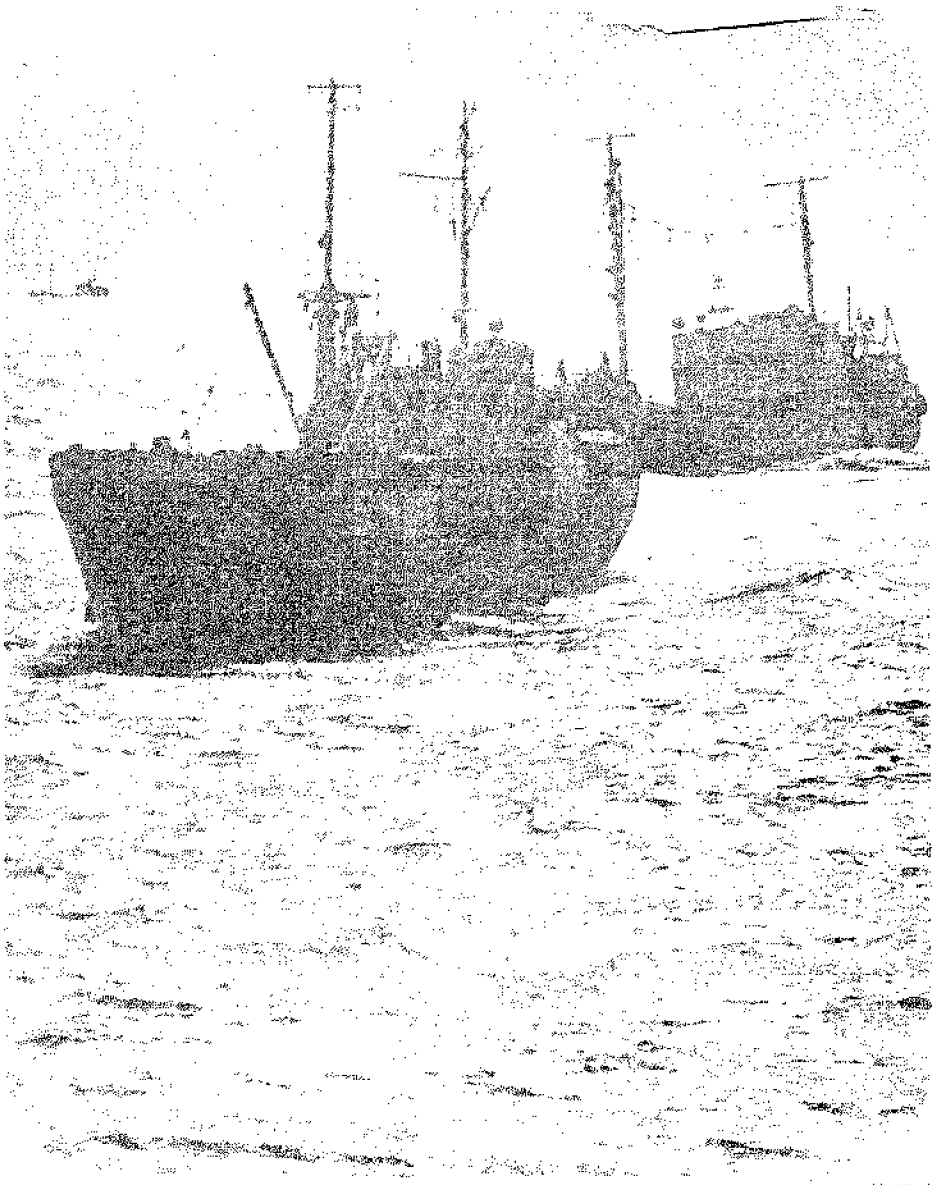

INTERNATIONAL FISHERIES REGIMES OF THE NORTH PACIFIC

BY WALTER B. PARKER

ALASKA AND THE LAW OF THE SEA

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Alaska Sea Grant Report No. 73-13

Contents

Introduction

Down through time the great marine ecosystems of the North Pacific flourished with little interference from forces other than those generated within themselves and the geological and climatological conditions that formed the basic frame within which these systems operated. Salmon moved from the rivers to the sea and back. Their basic populations were influenced primarily by severe winters, siltation from volcanic eruptions, erosion, and other causes. Additionally, changes in sea water temperature sometimes decimated the smolt population, and increases in the populations of their predators on land, in the rivers, and at sea affected all life stages. Still, enough salmon always survived to rebuild the runs, and if a migration to a particular stream was destroyed by one or the other of the above factors, through the centuries it eventually was rebuilt by variant fish from other runs.

The depths of the sea and the seabed supported varied benthic and pelagic species. Their populations fluctuated because of little understood, natural forces.

These ecosystems developed and thrived over many thousands of years, but man's influence has become significant only within the past 200 years. Within the past two centuries, his assault upon these systems has grown until he now threatens their foundation stocks. For example, decline of the herring, which the sea-living Tlingits call the "grass of the sea," could influence salmon abundance, and over-fishing of pollock could disrupt the food chain of sea mammals. We do not know much about the roles these species play in the basic food chain in their relationships as predator and prey or as competitors. We are beginning to suspect that a continual drain of nutrients, such as occurs by removal of fish from the ecosystem, may take its toll and reduce the total productivity of the system. Another disruptive factor may result from the overharvest of predator species which could allow noncommercial prey species to outcompete more desired fish.

In the Mediterranean and the Baltic, man has severely damaged major oceanic systems through industrial pollution. Fortunately, the North Pacific has escaped this danger until now; this marine ecosystem appears to be endangered solely by overexploitation of certain species.

The total productivity of a marine ecosystem is based on the abundance of chemical elements that can be converted to biomass under favorable physical conditions. Its value to man depends upon the species composition of that biomass.

One of the more successful legal regimes for managing a single marine species has been the North Pacific Fur Seal Convention. Unfortunately, fur seal populations have begun to decline in the North Pacific even though their take is monitored as closely as ever, and there is no evidence of poaching. The new aberrant factor is that in the past decade enormous amounts of Alaska pollock have been taken in the Bering Sea near the Pribilof Islands, the summer home of the fur seal. Yellowfin sole and other species have also been severely overfished in this area, affecting the species composition of the biomass. Although we do not know for sure, there is a dawning suspicion that the Pribilof fur seal herd no longer gets enough to eat in its summer feeding area.

It seems incredible that in this remote region of earth, man may have reduced the essential marine biomass to the point where major predator species can no longer find suitable prey. Yet, when annual catches of such species as pollock rise from 465,000 metric tons to more than three million metric tons in one decade, it becomes obvious that one must have more knowledge, not only of the single species—pollock—but also of its relationship to the entire marine system if there is to be successful management.

In just three years in the late 1950s, the Japanese high seas fleet fished the yellowfin sole to the point where it was not economically possible to continue the fishery. There is some evidence that stocks are recovering; the yellow-

Salmon from the Bering Sea being brought aboard a Japanese ship. Under the present management system, it is now possible for the high seas salmon effort to reduce some salmon runs below their capacity to recover.

fin sole is an abundant incidental fish in Bering Sea trawl catches, and it is a target in certain seasons and areas for both the USSR and Japan. However, the species is still depleted.

The same story was repeated in the decimation of the Pribilof shrimp fishery a short time later in the early 1960s.

The story of the halibut fishery provides another example of a reasonably successful management program which has apparently suffered reverses. The problem arises in large part from the sizable incidental catch of halibut in trawl fisheries that are targeted for other species.

The case of the salmon has been repeatedly documented during the past two decades. The Japanese claim that the effect of their high seas operations on North American salmon stocks is small compared to the overall take of American and Canadian salmon fishermen. However, there is little doubt at this time that the Japanese high seas efforts focus in part upon the western Alaskan salmon runs destined for Bristol Bay and other Bering Sea drainages of Alaska. The Bristol Bay fisheries are in the most desperate condition in their known history. The effect of the Japanese catch becomes major during such a period, while it may be tolerable during a peak salmon year. Under the present management system, it is now possible for the high seas salmon effort to reduce some salmon runs below their capacity to recover.

We know very little of the fluctuations of species other than salmon in the North Pacific. Most species experience natural fluctuations in abundance. It is usually not valid to assume a relatively constant production level in any species, but the economic structure of many fisheries is based upon a constant harvest level.

Man has proven, most recently with the blue whale, that he has the technological ability to hunt species to the edge of extinction. Still he has not been able to develop a system of laws and regulations that take into account the great complexities of life in the sea and adjust man's economic needs to those realities.

That he must do this is apparent to all concerned with the living resources of the sea—administrators, scientists, lawyers, processors, and even that most sanguine of optimists—the fisherman. The question for Alaska is what format for international control best suits the purpose of the state for managing its marine resources in general and its living marine resources in particular.

Table 1
North Pacific
Signatories to the International Law of
The Sea Conventions of 1958 and 1960

Convention	Canada	Japan	South Korea	USSR	U.S.
Continental Shelf	X			X	X
High Seas	X	X		X	X
Fishing and Conservation					X
Territorial Sea and Contiguous Zone		X		X	X

One of the recurring themes in Alaska fisheries discussions is that the federal government has not provided sufficient protection from the incursions of foreign fishing fleets. Yet, thirteen international treaty arrangements exist to protect and conserve the living marine resources of the North Pacific. Beginning in 1886, with the initial efforts to halt pelagic hunting of the fur seal, and continuing through the development of conventions and treaties to protect halibut, whales, salmon, herring, and crab, there has been an ongoing effort, both to conserve the species and to allocate the catch, among the nations that fish in the North Pacific.

Treaty arrangements have been largely a running dialogue between the four historic users of the North Pacific stocks—Canada, Japan, the Soviet Union, and the United States. In the last decade, South Korea has developed a fishery for North Pacific stocks and has participated in negotiations and agreements on fisheries management.

The effectiveness of the treaty arrangements, which must be renegotiated on an annual or biennial basis, keep the situation in a highly fluid state. This makes it difficult for those who are not directly involved to know what the exact relationship is between treaty arrangements and how they affect state and federal regulations on fisheries.

The different bases for treaty arrangements can be divided into two major areas—those treaties which were developed before the United Nations Conferences on the Law of the Sea in 1958 and 1960, and those which were made after that time. The United States is a signatory to all four conventions, as is shown in Table 1.

Alaska must operate within a larger U.S. marine policy. Yet, its role as the coastal state with by far the greatest part of the actual and potential U.S. fisheries and seabed resources certainly means that Alaska's state policies will have far more effect than those of states which control only a small part of a marine ecosystem.

At the same same time, the state must be careful not to assume a role beyond its fiscal resources, since the fisheries do not provide sufficient funds to pay for their own regulatory and research costs. Even the expected flood of oil revenues to Alaska will not maintain state support on a scale sufficient to effectively control and rehabilitate these vast marine ecosystems.

In reviewing the historical development and implementation of our current body of international treaty arrangements, it is hoped that the path to refinements of such current and future agreements will become more clear. The complexity of the present structure seems to indicate that a time may be approaching when more comprehensive arrangements are necessary. Whether those arrangements should be a continuation of the present system of bilateral and regional arrangements, some new regional arrangement, or a new international convention will certainly be discussed at the Law of the Sea Conference in 1974. This summary of treaty arrangements hopefully will provide background data for the individuals who will be involved in those discussions.

North Pacific Fur Seal Convention

It has been over sixty years since the North Pacific Fur Seal Convention was signed by Great Britain (for Canada), Japan, Russia, and the United States. This agreement culminated a series of disputes beginning about twenty years after the American purchase of Alaska, when the United States decided to enforce sealing regulations beyond the three-mile limit. This enforcement was necessary due to the steadily increasing take of fur seal on the high seas, largely by Canadian sealing fleets.

The major breeding rookeries of the North Pacific fur seal herds are located on the Pribilof Islands of Alaska and the Komandorski (Commander) Islands. A much smaller population utilizes the beaches of Robben Island, and seals have reestablished rookeries on several of the Kurile Islands, where they were once exterminated. Except for the Pribilofs, all of these areas now belong to the Soviet Union. However, Robben Island was a Japanese possession when the Fur Seal Convention was signed in 1911.

The Komandorski seal herd probably was hunted by Russian fur hunters (promoshleniki) shortly after Bering discovered these islands in 1741. Pribilof, spurred by Aleut tales of enormous seal herds on islands to the north of Unalaska, discovered the islands bearing his name in 1786, after which Russian fur seal hunting shifted to that area.[1]

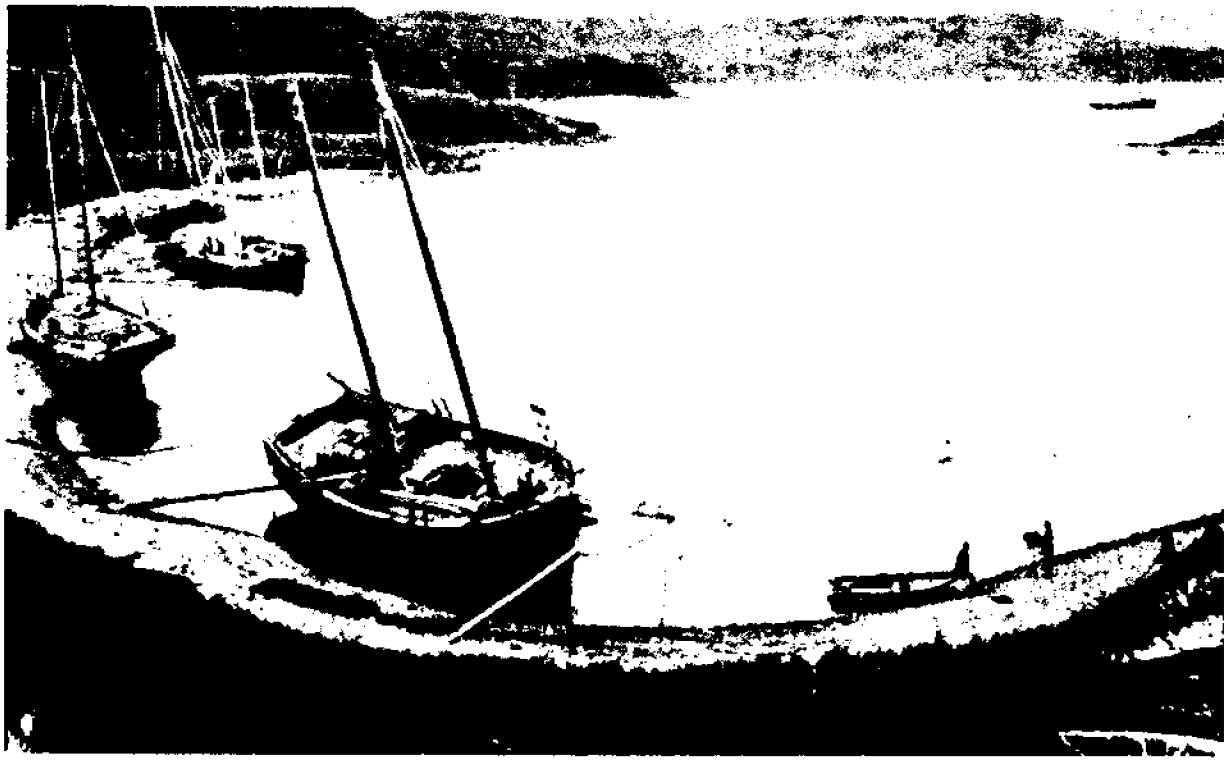
Between 1797 and 1818 the Russian American Company harvested 1,493,626 fur seal pelts,[2] for an annual average of 67,900 pelts. During the later years of the company's rule in Alaska, from 1842 through 1861, the average annual take fell to 16,900; only 338,604 were marketed during that period.[3]

The decline in the fur seal harvest was due to two factors: Earlier depletions had led Baron Wrangell to institute conservation measures which restricted the killing of seals to bachelors, and the market in China declined as a result of the Opium Wars, because Chinese silver surpluses were used for opium rather than for furs and other luxuries.

Thus, at the time of Alaska's cession to the United States, the Pribilof fur seal herd was estimated to total between two and five million animals, a population that may have been larger than the herd which was first observed in 1786.[4]

The assets of the Russian American Company were purchased by Hutchinson, Kohl, and Co. of San Francisco immediately after the sale of Alaska to the United States. Along with Parrot and Co., Williams and Haven, and a few smaller entrepreneurs, Hutchinson, Kohl and Co. took more than 240,000 fur seal pelts from the Pribilofs in 1868. Thus began the slaughter that eventually led to the conservation measures

1. S. B. Okun, *The Russian American Company*, trans. Carl Ginsberg (Cambridge: Harvard University Press, 1951), p. 55.
2. *Ibid.*, p. 58.
3. *Ibid.*, p. 228.
4. U. S. Congress, House, *Seal Fisheries of Alaska*, 61st Cong., 2nd sess., 2 April 1910, p. 271.



Canadian sealing schooners seized in the Bering Sea by the United States government in 1886, and beached at Unalaska.

which were initiated by the United States in 1886 to limit indiscriminate harvest of the fur seal resource.[5]

Hutchinson, Kohl, and Co. was reorganized as the Alaska Commercial Co. in 1868 and secured a twenty-year lease on the Pribilof sealing grounds. However, the firm's proprietary interest was nullified by seal hunting on the high seas conducted primarily by Canadians.

American efforts to halt pelagic sealing by Canadian ships soon brought a strong demand from Great Britain to cease interferring with British subjects on the high seas. This demand led to negotiations between the two countries between 1889 and 1891 that almost culminated in a naval confrontation on the Bering Sea.

President Grover Cleveland signed an act in 1889 during the last two weeks of his term which directed the President to issue annually a warning that persons entering "all the dominion of the United States in the waters of Behring's Sea" would be arrested if they engaged in pelagic sealing. This was, in effect, similar to a restatement of Tsar Paul's ukase of 1793 declaring the Bering to be a Russian sea. However Cleveland's statement applied only to the American portion of that sea as determined by the treaty of cession.[6] The British and Canadian response to this infringement on freedom of the seas was quick and firm.

Negotiations in 1890 resulted in a British proposal for a closed season on land and high seas sealing. This brought a negative response from the American side, largely due to the political power of the newly formed North American Commercial Co., a California firm which had just acquired the lease on the Pribilofs that the Alaska Commercial Co. had held for twenty years. North American Commercial had two partners, Mills and Elkins, who had ready access to President Benjamin Harrison. The new company had no intention of seeing its new acquisition regulated if it meant harvesting fewer than the 60,000 fur seals allowed in the lease.

5. Wendell H. Oswalt, *Alaska Commercial Company Records, 1868-1911* (College: University of Alaska Press, 1967), p. iii.

6. Charles S. Campbell, Jr., "The Anglo-American Crisis in the Bering Sea, 1890-91," in *Alaska and Its History*, ed. Morgan Sherwood (Seattle: University of Washington Press, 1967), p. 316.

President Harrison once again ordered American revenue cutters to arrest British (Canadian) sealers in the Bering Sea if found taking fur seals. This caused Her Majesty's Foreign Office to request of the Admiralty that four warships be held in readiness, two in British Columbia and two in Japan. The stage was set for the most severe Anglo-American confrontation since the Alabama claims.

Cool heads prevailed in Washington; the revenue cutters **Rush** and **Corwin** were detained in Seattle, and no seizures were made of Canadian ships.

Meanwhile, the U.S. Treasury Agent in Charge of the Pribilofs, Charles Goff, reported an alarming decrease in the herds, for which he and fellow agents there blamed land killings as well as pelagic abuses. This was substantiated in a report by Henry W. Elliott. America's leading authority on fur seals, who reported after a visit to the Pribilofs in 1890 that the herd was only one-fifth the size he had observed in 1874, down from 4,700,000 to 959,655.[7]

Goff ordered the North American Commercial Co. to discontinue killings after taking only 21,000 of its 60,000 quota. He was replaced the following year. Elliott was also discharged from his special position with the Treasury after he made his report to the press, an act of desperation occasioned by the Harrison administration's announced intention to resume the killings at the 60,000 level in 1891.

In March of 1891, Secretary of State James G. Blaine proposed the cessation of all land and sea killing of fur seals. The British at first were skeptical of this proposal, but finally decided to accept it as the best alternative. Meanwhile, the North American Commercial Co. had protested mightily against the total cessation of killing and the U.S. government was having second thoughts.

Finally, after much backing and filling, an agreement was worked out that prohibited pelagic sealing until May 1, 1892, limited land killings to 7,500 on the Pribilofs, and submitted the matter to arbitration.

The arbitration court convened in Paris in February, 1893. The U.S. position was based upon the negotiations between the United States and Russia that had ensued from the Russian ukase of 1821. (See Figure 1.) This decree had claimed jurisdiction 100 miles from the shores of the Pacific. The United States objected, and in the treaty of 1824 exacted a guarantee that "in any part of . . . the Pacific Ocean . . . the respective citizens or subjects of the high contracting powers shall be neither disturbed nor restricted, either in navigation or fishing."[8] Russia signed a similar agreement with Great Britain in 1825.

The American position at the Paris arbitration was that the Bering Sea was not a part of the Pacific Ocean. Therefore, Russia continued to exercise full jurisdiction 100 miles from the coasts of that sea until 1867, when the United States inherited those rights. Unfortunately, a large part of this argument rested upon documents which were falsified by the interpreter, Ivan Petroff.

Another aspect of the U.S. argument was that the fur seals were the property of the United States, and that while swimming abroad, they were like cattle wandering on the range, still in ownership and not to be taken or killed by others. As quoted in the minutes this argument reads:

> First. That the Alaskan fur seal, begotten, born and reared on the Pribilof Islands, within the territory of the United States, is essentially a land animal, which resorts to the water only for food and to avoid the rigor of winter . . . that it is domestic in its habits and readily controlled by man while on land . . . that at all times when in the water, the identity of each individual can be established with certainty, and that at all times, whether during its short excursions from the islands in search of food, or its long winter migration, it has a fixed intention, or instinct, which induces it to return thereto.[9]

The rest of the U.S. argument was based upon the protection that had been offered the herd under Russian and American regulation, the dangers of extermination by pelagic sealing, and the wastefulness of pelagic sealing.

The court held that the Bering Sea was a part of the Pacific Ocean; thus, the United States had no special rights, since these had been abrogated by Russia in the treaty of 1824. It also held that American rights to the seals ended at the three-mile limit outward bound. The United States was required to pay compensation for the seizures of Canadian ships.

7. U.S. Congress, *Investigation of the Fur Seal Industry in Alaska*, 50th Cong., 2nd sess., 1889, Appendix, p. 53.

8. Julius W. Pratt, *A History of United States Foreign Policy* (Englewood Cliffs, N.J.: Prentice-Hall, 1955), p. 357.

9. J.B. Moore, *History and Digest of the International Arbitrations to Which the United States Has Been a Party*, 10 vols. (Washington, D.C.: U.S. Government Printing Office, 1898), 1:812.

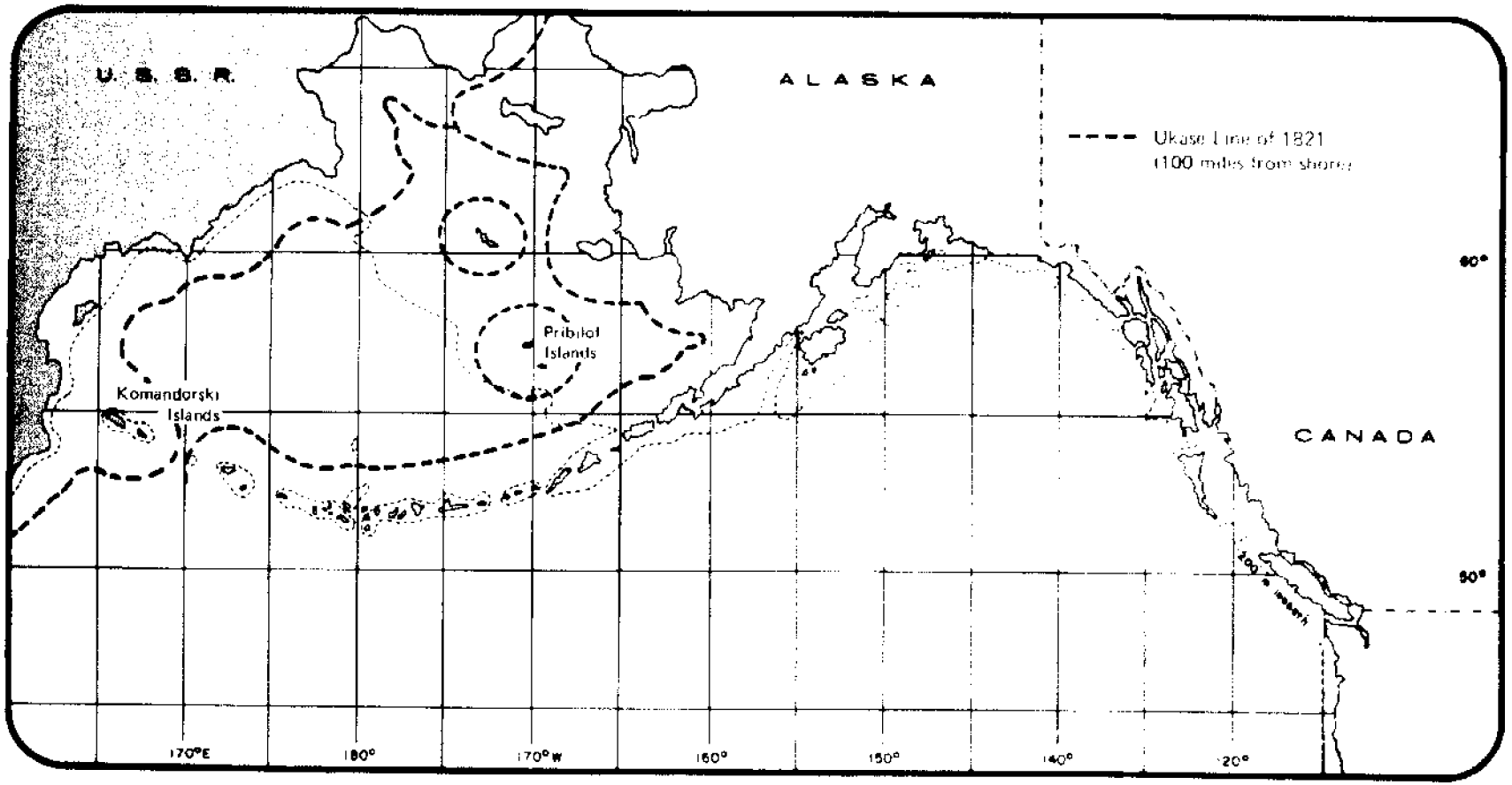


Figure 1 North Pacific Fur Seal Convention

The arbitration also established a set of regulations for the more effective preservation of the seal herd. These regulations applied to British (including Canadians) and American subjects only, and could not govern the actions of Russians and Japanese.

The Japanese had begun active pelagic sealing, and occasionally even killed seals on the Pribilofs. They were once apprehended there and several were killed by U. S. Treasury agents. As a result of Japanese sealing activities, the regulations established by the arbitration court were largely ineffective, and the seal herds continued to decline.

Since the North Pacific fur seal is a single species, pelagic hunting also had grave effects upon the Russian herd in the Komandorskis and the Japanese group on Robben Island.

The United States became more and more incensed over pelagic sealing and at one time threatened to kill the entire Pribilof herd. Almost a million skins were taken on the high seas from 1879 to 1909, and this total did not include many seals that were killed but not recovered. The high seas harvest peaked at 61,838 reported skins in 1894, immediately after the arbitration. The pelagic sealing was especially disastrous, because from 60 to 80 percent of the catch was comprised of females.

Finally, the United States was able to bring Great Britain, Japan, and Russia to the negotiating table when Russia became concerned over its herd. Each country owning fur seal rookeries agreed to share 30 percent of its take with Canada and Japan (each of which received 15 percent of the kill from the Pribilofs and Komandorskis), while Japan gave 10 percent of the Robben take to each of the other signatories. Pelagic sealing was prohibited except by aborigines using primitive weapons.

This agreement was reached barely in time; the 1912 seal count on the Pribilofs totaled only 215,900 animals, and this herd was estimated to comprise 80 percent of the total North Pacific fur seal population.

Few other international treaties have been as successful as the Fur Seal Convention in achieving and maintaining its objectives over a long period. Its success can be attributed to two factors: The need of the two principal resource owners, the United States and Russia, to protect their stocks, and the incorporation of the interests of the other signatories by giving them a share of the catch.

The original convention lasted for thirty years. In October of 1940, Japan gave the required one year's notice of abrogation, and the treaty terminated in October of 1941. From 1942 to 1957, the Pribilof herd was protected by a provisional agreement between the United States and Canada which gave Canada 20 per cent of the annual harvest. In February of 1957, a new interim convention was concluded by the original four signatories which was similar in form to the 1911 treaty. This convention was renegotiated in 1969 and 1971.

Until recent years, the success of the convention in maintaining herd levels was unquestioned as the seals increased from their 1912 low to over 1,500,000 animals in 1962, sustaining annual yields of around 62,000 males and 32,000 females from 1956 to 1962. In recent years, the Pribilof herd has begun to decline for undetermined reasons. The annual fur seal take currently is restricted to 33,000. A potentially important factor since 1962 has been the tremendous fishing of demersal and pelagic stocks around the Pribilofs by Japan and the Soviet Union, especially the Japanese catch of Alaska pollock.[10]

As the stocks upon which the fur seal historically has fed decline, the predator-prey relationship between the seal and high value stocks, such as salmon, becomes of greater concern. Other factors that must be considered are the recent entry of South Korea into the North Pacific fishery, and the possibility that other new entries may be forthcoming. While a resurgence of purposeful pelagic sealing on a large basis is not likely, incidental capture by trawlers could occur in numbers sufficient to endanger the herds.

When the original convention was negotiated, its signatories controlled almost one-third of the surface and half of the population of the world. The present signatories have 20 percent of the world's population and area. The difference is caused by the demise of the British Empire, now replaced by Canada as a signatory.

The recent failure of the Fur Seal Convention, following its long-term effectiveness, is a unique example of the inability of single species management to achieve success unless the relationships with other species are maintained. As a minimum requirement, scientific information must be exchanged on a more regular basis if the new decline of the fur seal herds is to be arrested.

10. James Brooks, Commissioner, Alaska Department of Fish and Game, 1973: conversation in regard to the Fur Seal Negotiations held in March 1973 in Tokyo.

The enormous amount of Alaska pollock taken in the Bering Sea near the Pribilof Islands may be adversely affecting the fur seal populations there.

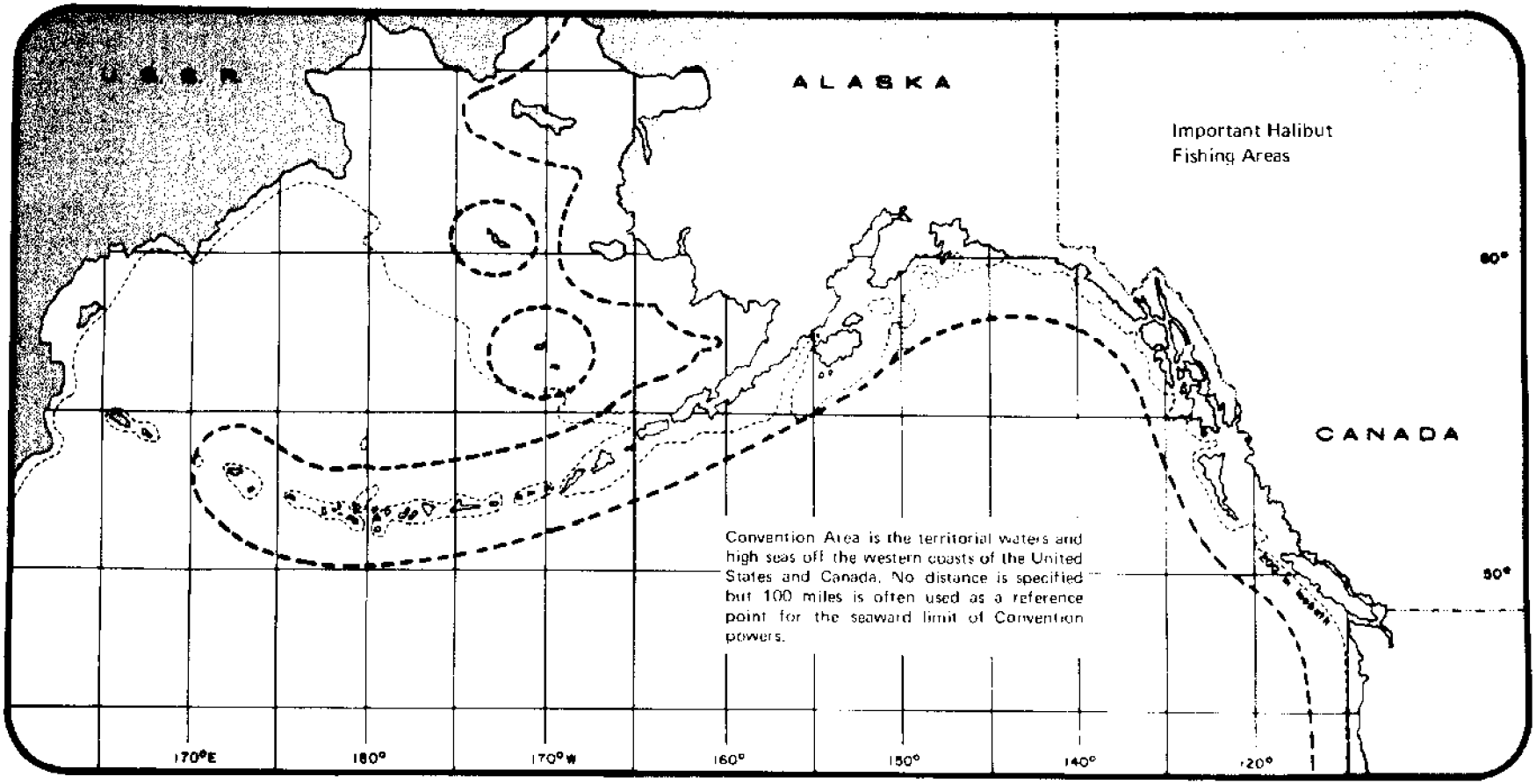


Figure 2 International Pacific Halibut Convention Area of Jurisdiction

International Pacific Halibut Convention

The International Pacific Halibut Convention has the distinction of being the first international agreement for joint management of a marine fishery. It was established in 1923 between the United States and Canada to conserve and protect the halibut stocks of the North Pacific and the Bering Sea. The original convention was extended in 1930 and 1937. It was superseded by the 1953 Convention, which required that the halibut stocks be managed on a maximum sustained yield basis.

The commercial halibut fishery of the United States and Canada began in 1888. Prior to that date, the Bering Sea and Gulf of Alaska stocks had been utilized extensively in the Alaskan subsistence fisheries. The catch reached sixty-nine million pounds by 1915, after which a steep decline began.[11] This drop caused the halibut situation to become a major agenda item at the American-Canadian Fisheries Conference in 1918 in Washington, D. C.

The deliberations which began at the conference led to the signing of "The Convention for the Preservation of the Halibut Fishery of the Northern Pacific Ocean Including Bering Sea" on March 2, 1923. The convention went into effect in 1924. The immediate intent of the convention was not to regulate the fishery, but to build a base for future regulation.

Four commissioners (two appointed by each country) began a series of scientific investigations. Their first report in 1928 confirmed that the halibut fishery would continue to decline without regulation. The reasons for the decline were many, but the primary cause was the increased fishing effort made possible by new techniques and equipment. After 1920, halibut fishermen switched from sailing vessels to diesel-powered schooners and changed from fishing setlines from dories to fishing longlines from the new powered ships.

In 1930, a new convention was signed that gave the International Fisheries Commission regulatory powers in the territorial waters and the high seas off the western coasts of the United States and Canada. (See Figure 2.) In its 1928 report, the commission had recommended that it be given the power to (1) establish areas within which the total catch of halibut might be lowered by a predetermined percentage annually to achieve a stable yield; (2) close indefinitely the spawning areas and those areas inhabited chiefly by immature halibut; (3) regulate gear to prevent undue waste; (4) set closed seasons, and (5) license all vessels fishing for halibut within treaty waters.[12] The recommendations were incorporated in the convention and the international regulation of halibut was begun, twelve years after the decline of halibut stocks first caused major concern.

Rebuilding the fishery was a slow but effective process. In 1938, the U. S. Bureau of Commercial Fisheries reported its belief in the ability of the Commission ultimately to rebuild the stocks to a higher level of productivity.

The Commission was able to state in its 1954 report:

> When regulation began 23 years ago, the catch was only 44 million pounds and a nine-month season of fishing was required to make the catch. Under the Commission's management there has been such a progressive improvement of the stocks that the present 71 million pound catch was taken in about two months of fishing.[13]

11. Ronald C. Naab, "The Role of International Agreements in Alaskan Fisheries," *Commercial Fisheries Review*, 30 (October 1968):48.
12. International Fisheries Commission, *Report 13-14*, Seattle, Wash., 1931.
13. International Pacific Halibut Commission, *Report 22*, Seattle, Wash., 1955.

The 1953 Convention increased the size of the Commission to three commissioners from each nation and changed the name of the group to the International Pacific Halibut Commission (IPHC). The successes of the past twenty-three years had led most observers to believe that a continuation of effective management would increase the yield of halibut, although some questioned whether the increase should be credited to management or to natural increases in productivity caused by more favorable environmental conditions.

Whatever the reasons, the Commission was able to bring about a gradual growth in halibut catches until 1960. During the decade of the sixties the following important changes took place in the fishery: (1) An overall increase in effective fishing effort; (2) an increase in catch by smaller boats concentrating on the catch areas; (3) increased incidental catch by domestic trawlers of the United States and Canada, and (4) increased incidental catches by Japan and the USSR, chiefly in the Bering Sea.[14]

Although the incidental catches by trawlers has been a paramount factor in the decline of halibut, the actual decline began when the trawling effort was quite low in both the North Pacific and the Bering. The increased effort of the longline fleet was permitted to go too far, because the effect of the incidental catch by trawling fleets was not recognized soon enough.

The Commission has steadily reduced catch limits, but these measures have not been sufficient to offset the effects of increased longline fishing and the incidental losses. Although domestic trawlers are prohibited from retaining halibut, there is some mortality among injured fish that are returned to sea.

The effect of the abstention feature on halibut incorporated in the International North Pacific Fisheries Convention between Canada, Japan, and the United States has also been important. Under this convention, Japan agreed to abstain from fishing North American halibut stocks that are fully utilized. The IPHC stated that the major halibut stocks were being exploited at maximum permissible levels, but the International North Pacific Fisheries Commission (INPFC) did not agree, and in 1963, halibut was removed from the abstention list for the Bering Sea.

INPFC thereby established a quota for Japanese, Canadian, and U. S. longline fleets which resulted in catches of 8,000 metric tons in 1963 and 1,700 in 1964. In the next three years, the catch fell to 808 metric tons in 1965; 776 in 1966, and 1,453 in 1967. Apparently, the catch for 1963 and 1964 was far in excess of the maximum sustained yield.[15]

The catastrophe in the Bering Sea in the mid-1960s has set up a chain reaction throughout the range of the halibut. A primary nursery for this species is in the immediate offshore areas of the eastern Bering, areas that are heavily worked by trawlers and other types of fishing vessels. The take of immature halibut has begun to have its effect in other areas, as shown in Figure 3.

Catch per unit effort (CPUE) is now about one-half of what it was in 1960, and decreased catch limits have not yet brought about an upturn in CPUE. In short, the decline was begun by the longline fleet and an increase in setline operations, and was then accelerated by the trawling efforts. The interruption of stock recruitment in the Bering will make it difficult to assess whether management measures in other areas are effective.

14. B. E. Skud, "Management of the Pacific Halibut Fishery" (Paper delivered at the Technical Conference on Fishery Management and Development, Vancouver, B. C., Canada, February 1973), p. 10.
15. International North Pacific Fisheries Commission, *Statistical Yearbooks*, 1952-1970.

(International North Pacific Halibut Commission)

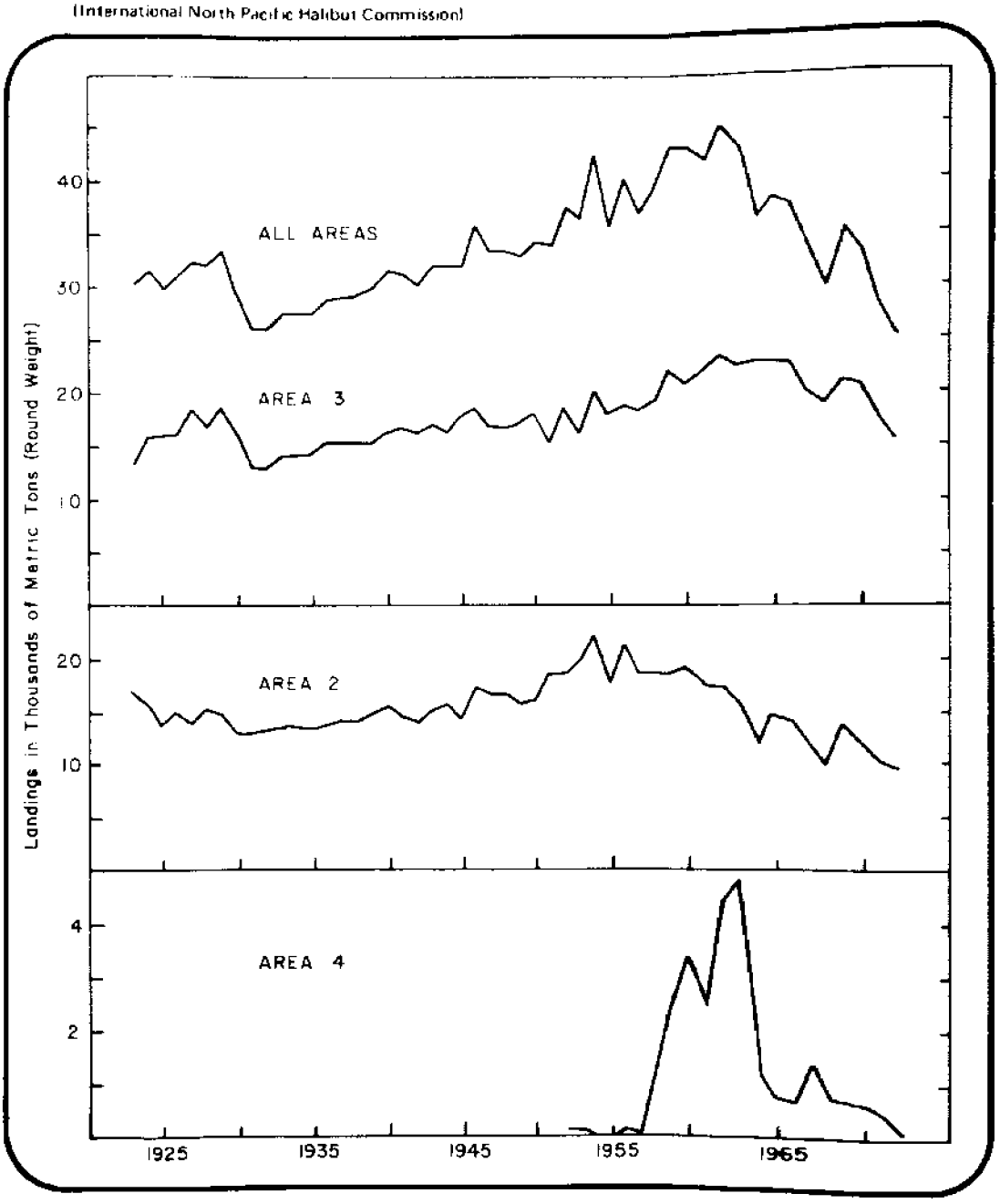
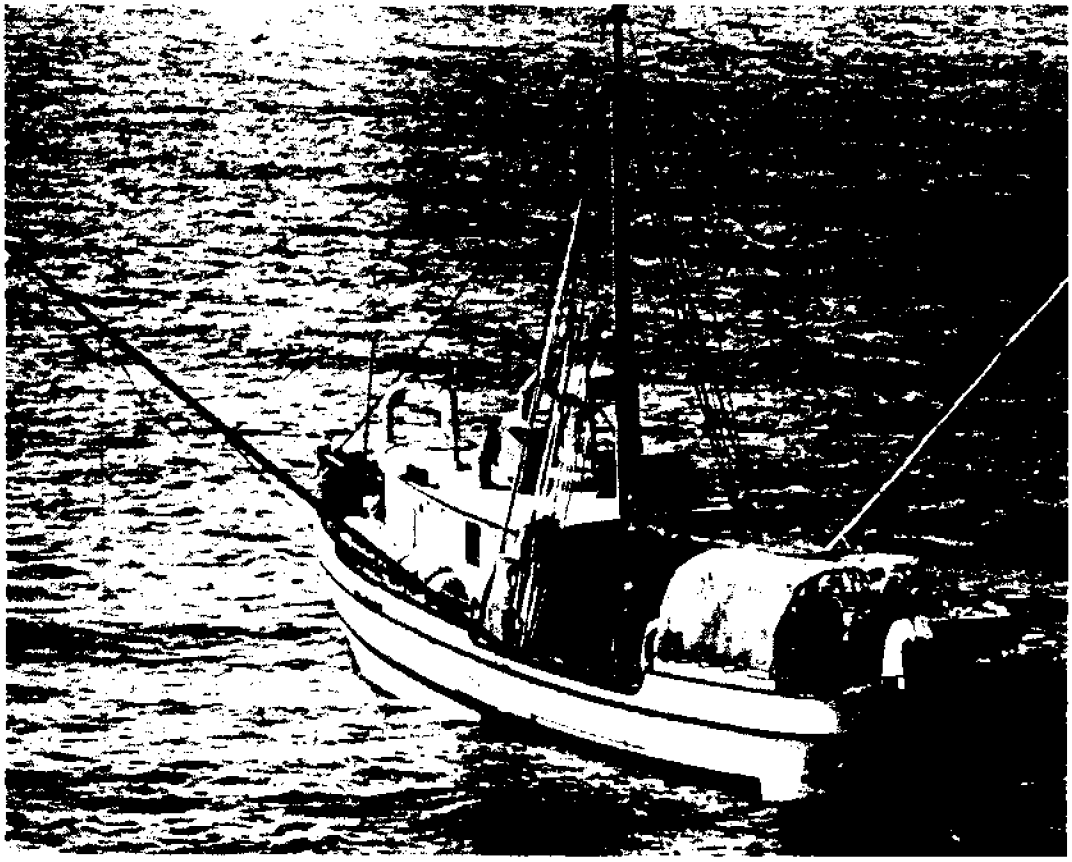


Figure 3 Annual landings of halibut by regions; Area 2 (northwestern states, British Columbia, and southeastern Alaska); Area 3 (Gulf of Alaska and southern Aleutians); Area 4 (Bering Sea).



A U.S. halibut boat, the SANAK. The halibut fishery is the first fishery to be managed by international agreement.

The IPHC has continued to maintain the viability of the fishery through the sacrifice of catch by the longline fleet, since no means of controlling incidental catch in the Bering has been developed. Greater protection of the Bering nursery area is an obvious goal of the Commission and, hopefully, the presence of American observers in greater numbers in the Bering will provide some of the additional information that is needed to achieve this goal.

Further problems for this fishery may be occasioned by the massive takes of other species in the Bering. Little is known about species relationships in the area, but it would seem likely that a general decline in abundance of such species as herring and the smaller flounders would have some long-range effect upon halibut.

In summary, it is becoming obvious that it was possible to maintain the abundance of halibut through single species control only as long as a relatively simple fishery for high value stocks existed in the North Pacific. The great increases in catches of demersal and pelagic species of fish and of crustaceans have had effects on the basic food chain that are not yet recognized. More exact data on recruitment and greater control of the actions of the trawl fleets in critical halibut habitat will be necessary to manage the fishery.

At the meeting of the International North Pacific Fisheries Commission in November of 1973, Japan agreed to prohibit trawling in the winters in the areas along the edge of the continental shelf in the southeastern Bering Sea to reduce the incidental catch of halibut. Even with this further protection, the future is not bright for this species.

International Whaling Convention

The International Whaling Convention (IWC) provides for control of the whale harvest on a world wide basis. It is the only agreement of world wide scope that affects stocks native to areas of the North Pacific which are considered in this study. U. S. nationals are now prevented from taking all sea mammals, including whales, except when allowed to do so by international treaty or when taken by Indians, Eskimos and Aleuts of the North Pacific and Arctic Oceans.

The United States has not conducted commercial whaling ventures of any magnitude in Alaskan waters for many decades. However, whaling in Alaska was once a fabulous industry that rose to great heights, and then was eclipsed rapidly by changes in technology and market demands.

American whalers began operations in the Pacific in 1771, chiefly in pursuit of sperm whales. This largely tropic fishery slowly expanded northward. In 1835, the right whale grounds off Kodiak were discovered by the American fleet. The search for new whale herds moved to the coasts of Kamchatka in 1843, where bowhead whales were taken. The first whaler, the American ship **Superior** passed through Bering Straits in 1848 in pursuit of the bowhead, and the great Arctic whale fishery was born. The whale hunt in the North Pacific and Arctic peaked in 1852, and 278 ships were employed. In 1855, a total of 154 American whaling ships passed through Bering Straits.

Between 1874 and 1890, the American Pacific whaling fleet took 4,200,043 pounds of bone and 284,395 pounds of ivory.[16] This would indicate a take of between 3,000 and 4,000 whales during those years, which would have been acceptable had the harvest not been concentrated almost exclusively on the bowhead. Starting in 1889, the fleet pursued the bowhead as far east along the Arctic coast as the mouth of the MacKenzie River, leaving this species few refuges.

American whalers took some 300,000 whales between 1835 and 1872, a great percentage of which were sperm whales. There is some likelihood that this and other heavily hunted species would have been exterminated if oil had not been discovered in Pennsylvania in 1859. The discovery led to a continuous reduction of the whaling fleet, because kerosene rapidly replaced whale oil as fuel for lamps. Only the continued demand for whalebone, primarily for corset stiffeners, made whaling operations profitable for the next decades.

The high price of bone, averaging $4.00 a pound, prompted whalers to seek this product almost exclusively, because oil was a glut on the market from 1870 to 1890. Hundreds of whale carcasses were cast adrift every year after their heads were severed so that their baleen could be extracted.

Several disasters also beset the whaling fleet. The Confederate raider **Shenandoah** destroyed thirty-four whaling ships in its famous raid on the Arctic fleet in 1864. In 1871, the fleet was caught in the ice off Point Belcher, and thirty-three ships were lost. A repeat performance occurred in 1876, when twenty-eight ships were lost off Point Barrow. In 1898, eight ships were again trapped in the ice off Point Barrow, leading to the famous rescue expedition in which a reindeer herd was driven from Norton Sound to Point Barrow to feed the starving crews.[17]

Beginning in 1866, sailing ships were slowly replaced by vessels using steam engines for primary or auxiliary power. However, fewer and fewer ships returned to the Arctic, and by 1902 only eight were engaged in the Arctic bowhead whale fishery. The industry continued to decline, and by 1914 was operating largely from shore stations with fertilizer as its chief product.

16. U. S. Bureau of the Census, "Population and Resources of Alaska," in *1893 Census* (Washington, D. C.: U. S. Government Printing Office).

17. U. S. Treasury Department, *Report of the Cruise of the U. S. Revenue Cutter Bear* (Washington, D. C.: U. S. Government Printing Office).

While whaling was a dying industry in Alaska and the rest of the United States, it began a new upsurge in other parts of the world around 1890. Whale oil had come into use as a lubricant, and the rapid industrialization of the United States and western Europe increased the demand. The improvement of the harpoon gun by the Norwegian, Svend Foyn, in 1865 and its later use with fast steam launches made possible extremely efficient catcher operations. It also made possible hunting of the rorqual whales, notably the blue whales, which previously were largely unexploited due to their speed. Most of the new expansion was directed to the Antarctic after 1893, as the new techniques rapidly decimated the remaining whales of the North Pacific.

Japan adopted the new Norwegian techniques in the first decade of this century, and began to expand its previously coastal-based whale fishery into the western North Pacific. By the 1930s, Japanese fleets were hunting in the eastern North Pacific, the Bering Sea, and the Arctic Ocean. World War II interrupted this activity.

In 1910, whale oil was first used in the manufacture of margarine. This caused a new explosion in demand and a great expansion of the Norwegian and other fleets. Even in Alaska some resurgence occurred in the industry, and in 1925 six steam whalers of the American North Pacific Co. took 233 finback whales, 193 humpbacks, thirty-six blue whales, thirty-three sperm and one right whale.[18]

The introduction of factory ships by the Norwegian and British fleets after 1925 made it possible to exploit whale stocks everywhere in the world. After a brief respite from 1930 through 1932, due to the onset of the Depression and a collapse in whale oil prices, whale hunting was resumed. Voluntary agreements between private companies were attempted in an effort to restrict the catch, but a rapid expansion of German and Japanese distant-water whaling fleets made it obvious that these agreements would not work.

The first International Whaling Agreement was concluded in June of 1937. A ban was placed on the taking of gray and right whales, two species that had almost been eliminated in the North Pacific, and season size limits were placed on other species of whale. The agreement was renewed in 1938 with the addition of a sanctuary in the South Pacific.

This whaling agreement initiated the practice of national governments providing inspectors to enforce reguations, and it provided that signatories must furnish information as required by the International Bureau of Whaling Statistics in Norway. The United States was the only nation active in the North Pacific fisheries to sign the agreement, and by this time the U. S. North Pacific whale fishery was largely confined to the subsistence take of Eskimos.

In the 1930s, Japanese whalers (with some aid from whalers of the Soviet Union), had made serious inroads on the blue whale stocks of the North Pacific. Despite the respite during World War II, the catch continued to decline after the war. Obviously, a ten-year respite is not enough to have an effect upon the recruitment and restoration of such a long-lived species as the whale.

As a result of the continued decimation of the blue whale, a series of conferences which began in 1944 led to the formation of the International Whaling Commission (IWC) in 1948. While the Commission was empowered from the beginning to set up a research staff, it did not choose to do so, but met annually to review regulations and set quotas.

In 1950, there were 699 whales taken from bases in Kamchatka and 1,658 from bases in the Kuriles. No catches were reported from Alaskan bases.[19] Japan continued to advance eastward, and after the MacArthur Line restrictions were removed by the peace treaty in 1952, they began to operate with two fleets in the western Bering and western North Pacific. The Soviet Union was operating with one fleet during this period, but did not operate as far east as the Aleutians until 1959.[20]

Meanwhile, the IWC was engaged in constant controversies over quotas during the 1950s. The setting of quotas without allocations to national fleets had resulted in an increase in catcher boats, so that company and nation could secure as large a share of the quota as possible—a situation familiar to all who have had experience with quotas that do not allocate portions of the catch between participants. In any case, Norway and the Netherlands withdrew from the IWC in 1959, and the quotas were dropped for several seasons to persuade them to reenter.

18. William T. Hornaday, *Hornaday's American Natural History*, 13th ed. (New York: Charles Scribner's Sons, 1927), p. 148.

19. International Bureau of Whaling Statistics, Oslo, Norway. *International Whaling Statistics, 1950.*

20. Philip E. Chitwood, *Japanese, Soviet, and South Korean Fisheries off Alaska*, U. S. Fish and Wildlife Service, Circular 310, Washington, D. C., January 1969, p. 29.

A quota allocation was finally agreed upon in 1961 for three seasons. Initial attempts were made to establish an international observer program for the whale fisheries. The observer program was not implemented until another decade passed, however, finally becoming operative in 1972.

Due to the initial failure of the quotas, the Antarctic whale stocks had been depleted, and the catches showed marked declines. This led to increased effort in the North Pacific by Japanese and Soviet fleets as they sought a means to amortize their substantial investment in whaling fleets. By 1963, the North Pacific catch exceeded that of the Antarctic. The pattern of excessive harvest of the Antarctic and the North Atlantic fisheries was soon duplicated on the much smaller stocks of the North Pacific. The fishery shifted from blue whales to fin whales to sei whales as each species became progressively overfished. Meanwhile, the sperm whale fishery continued to expand, and the harvest of this species rose to a world-wide high of 29,000 in 1964. Catch statistics are listed in Table 2.

Finally, it was realized that if all the North Pacific whale stocks were not to suffer the fate of those of the Antarctic, it would be necessary to introduce some quota system. At a meeting in Honolulu in February of 1966, Canada, Japan, the USSR, and the United States met to establish catch limits for the Pacific Ocean. The quotas set at this conference were at or above the established catch figures and would not in themselves have any effect upon stock conservation. One major advance was the establishment of quotas for individual species, instead of using blue whale units, as was common in the Antarctic regulations. The blue whale unit was the equivalent of one blue whale, two fin whales, 2.5 humpbacks, or six sei whales. It was impossible to provide management of other than the total whale biomass under this system. As shown in Figure 4, stocks in the North Pacific were in a serious state of decline, making the need for species quotas imperative.

A sperm whale being butchered aboard a Japanese ship. There is general agreement that the male surplus of sperm whales has been hunted to its limits.

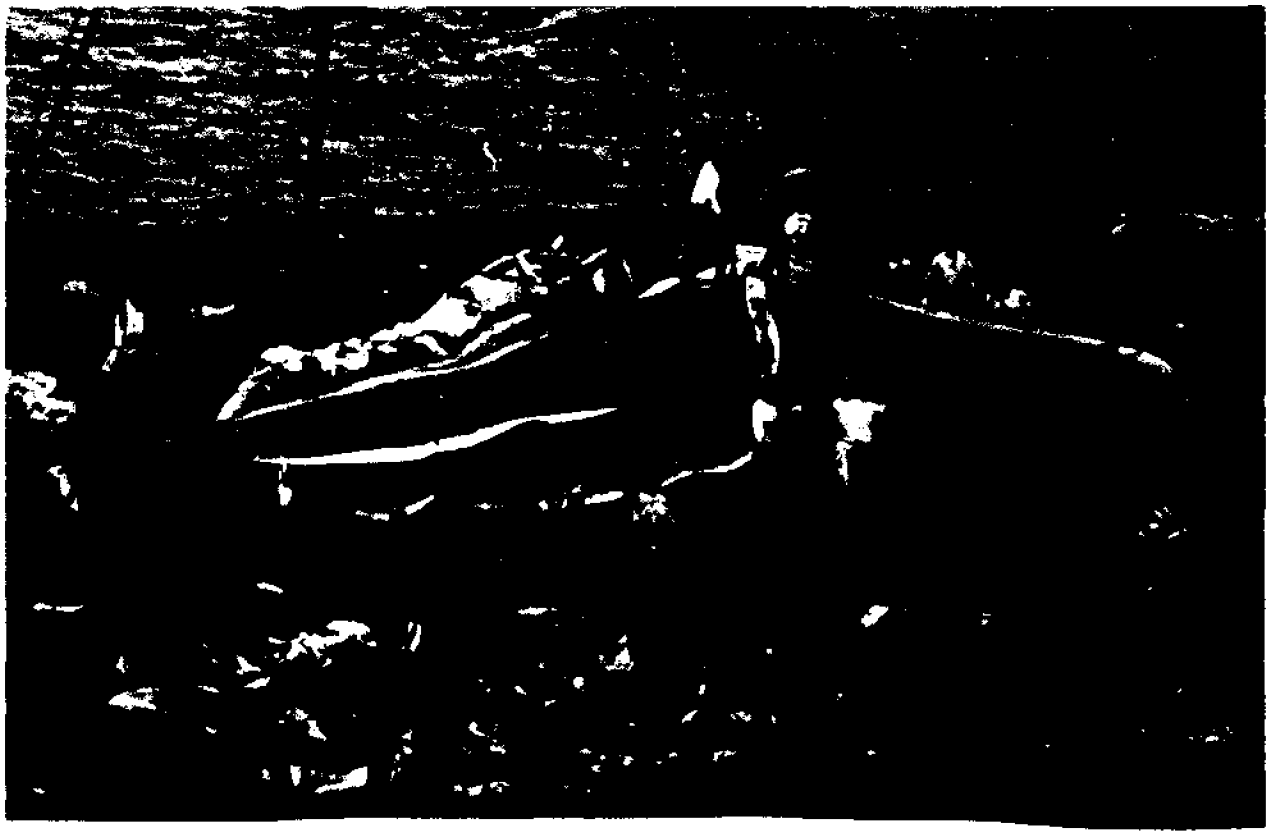


Table 2
North Pacific Whale Harvest 1959-1971

Year	Blue	Fin	Humpback	Sei	Sperm	Right[1]	Other	Total
				USSR				
1959	22	132	74	93	1,560			1,881
1960		128	57	59	2,228			2,472
1961	2	79	314	54	1,868			2,317
1962	19	438	1,213	303	1,955			3,928
1963	347	1,060	2,242	514	5,125			9,288
1964	77	2,500	242	595	5,432	1		8,847
1965	72	1,492	243	695	8,196			10,698
1966		1,347		1,545	9,476			12,368
1967		1,188		1,997	9,430			12,615
1968		1,064		1,105	9,542			11,711
1969		593		1,091	8,211			9,895
1970		412		782	8,585		66	9,845
1971		190		296	5,525		638	6,103
				Japan				
1959	70	1,450		32	1,800			3,352
1960	70	1,393		203	1,800			3,466
1961	70	1,452	9	4	1,800	2		3,338
1962	48	1,166	17	260	22,549	2		4,043
1963	57	1,045	10	945	2,700	2		4,760
1964	42	1,007		1,533	2,461			5,043
1965	49	1,406	40	1,398	2,460			5,353
1966		1,370		2,499	5,101		20	8,990
1967		939		4,010	5,635		21	10,605
1968		782		4,625	6,747	2	171	12,327
1969		652		4,057	6,668		89	11,466
1970		595		3,719	6,184		73	10,571
1971		608		2,707	5,131		270	8,716
				Total North Pacific Whale Harvest USSR-Japan				
1959	92	1,572	74	125	3,360			5,233
1960	70	1,521	57	262	3,028			5,938
1961	72	1,531	333	58	3,686	2		5,655
1962	67	1,604	1,230	563	4,504	2		7,971
1963	404	2,105	2,252	1,469	7,825	2		14,048
1964	119	3,507	242	2,128	7,893	1		13,890
1965	121	2,898	283	2,093	10,656			16,051
1966		2,574		3,718	12,439			18,731
1967		2,127		6,007	15,065		21	23,220
1968		1,846		5,730	16,289	2	171	24,038
1969		1,245		5,148	14,879		89	21,361
1970		1,007		4,501	14,769		139	20,416
1971		798		3,003	10,656		908	14,879

1 – Taken for scientific research
Source: International Whaling Commission

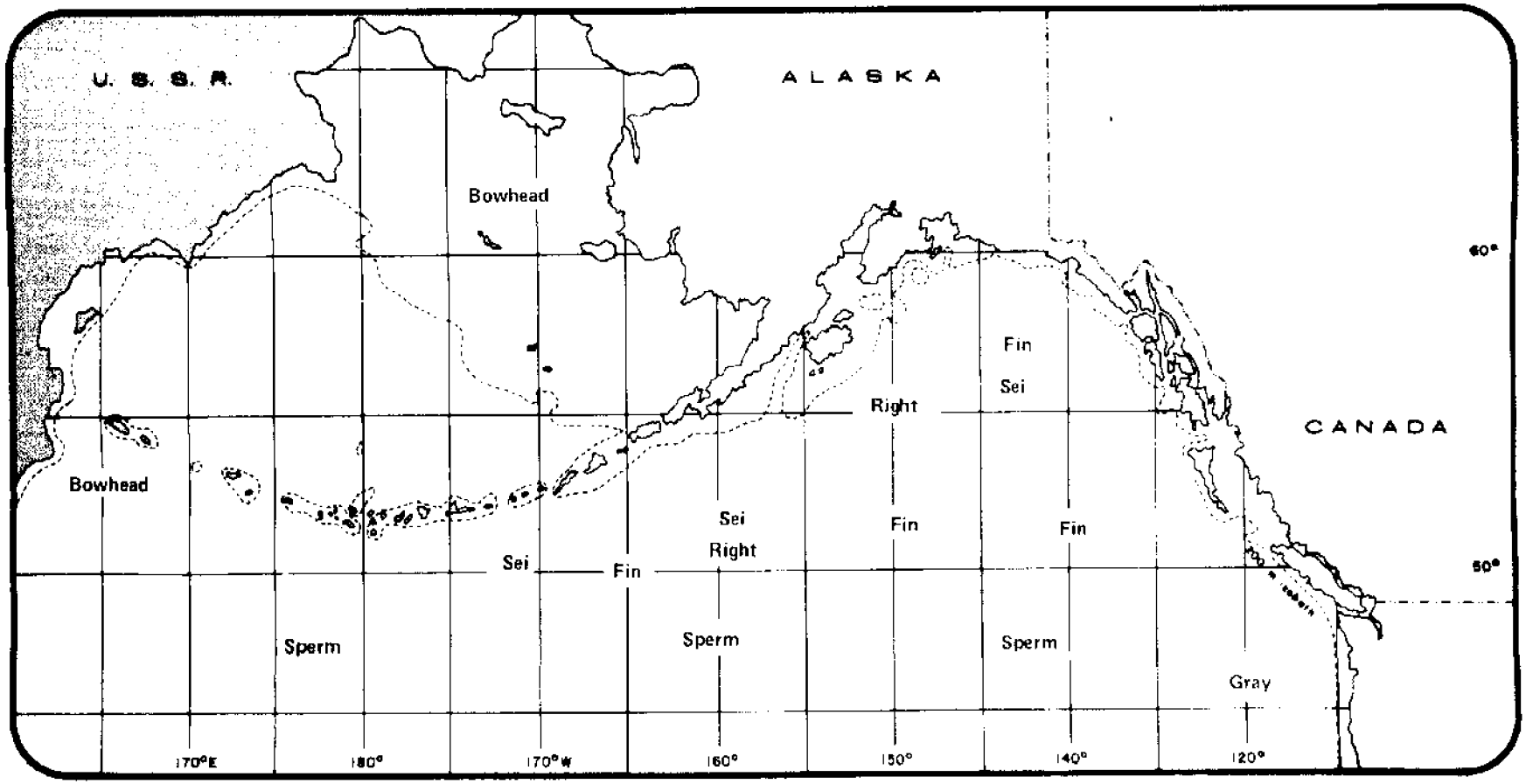


Figure 4 Whaling Areas Off Alaska

Table 3
Sperm Whales in the North Pacific

	Males	Females
Initial stock size exploitable whales	133,900	123,800
Size of exploitable stock in 1960	63,600	123,800
Surplus before reaching stock size giving maximum sustained yield	none	60,000 approx. *
Maximum sustained yield	4,290	5,234
1969 catch	11,329	3,605
Planned 1970 catch (10% less than for 1969)	10,196	3,245
% of maximum sustained yield represented by 1970 planned catch	238%	65% **

* Taking the full number would further reduce the sustained yield of males.
** Without including surplus to reach optimal population size.

Source: S. Osumi, Y. Shimadzu, and T. Doi, *The Seventh Memorandum on the Results of Japanese Stock Assessment of Whales in the North Pacific.*

The continued hunting on a large scale of sperm whale stocks of the North Pacific has been possible because the sperm whale is the only polygamous species of the large whales, it is widely scattered, and the males are larger than the females; thus they are hunted more intensely. Estimates, shown in Table 3, have been made of the maximum sustained yield for the sperm stocks and of the population levels needed to maintain the yield. There is not yet general agreement that these figures are correct, but there is general agreement that the male surplus has been hunted to its limits and that future sperm whaling should be based on the sustained yield of both sexes.[21]

Despite the imposition of the quota system, the future of the North Pacific whale stocks looked dark until the United States began to take some major actions. Prior to the twenty-second meeting of the IWC on June 2, 1970, the U. S. Department of the Interior placed all eight species of great whales on the endangered species list, implementing the Endangered Species Conservation Act of 1969. This made it illegal to import products from these species into the United States. Since the United States was using 30 percent of the world's whale products at that time, the import ban had an impact on the two major producers, Japan and the Soviet Union.

At the IWC meeting, the Scientific Committee, headed by D. G. Chapman of the University of Washington at Seattle, recommended a sustained yield of 1,300 for fin whales and 3,100 for sei. The commission set quotas of 1,308 for fins and 4,710 for seis with an additional provision that up to 10 percent of the catch in one species could be made up in the other. The sperm catch limit was 240 percent of the recommended sustained yield for bull sperm whale.

There was considerable discussion of the International Observer program, first proposed in 1960, but again no action was taken. However, at the end of the conference, a recording of the song of the humpback whale was played as the final item on the agenda. It was reported to have made an impression upon those who remained to listen.[22]

In the 1971 meeting, the Commission reduced the allowable catch by 20 percent for the 1972 season, which still left the quotas well above the maximum sustained yield for sei and sperm whales. This meeting engendered a wave of protest throughout the United States because the Commission allowed quotas in excess of those recommended, and once again disregarded the U. S. position, which placed the great whales on the endangered species list.

The stage was set for the great confrontation in June of 1972, when a ten-year moratorium

21. D. G. Chapman, "Management of International Whaling and North Pacific Fur Seals: Implications for Fisheries Management," (Paper delivered at the Technical Conference on Fishery Management and Development, Vancouver, B. C., Canada, February 1973), p. 7.
22. Scott McVay, "Can Leviathan Long Endure So Wide a Chase?" *Natural History Magazine*, January 1971, p. 36.

on the hunting of whales was passed at the United Nations Conference on the Human Environment at Stockholm. The action came just before the IWC meeting in London. The resolution was strongly pushed by the Secretary General of the conference, Maurice Strong, and by Walter Hickel, who in 1970 as Secretary of the Interior, had placed the whale on the endangered species list. The conference endorsed the proposal by a vote of fifty-three to nothing in committee; Japan abstained, as did two other nations.

Despite this almost unanimous international indication, when the IWC met two weeks later, a U. S. proposal for a one-year moratorium was voted down six to four, with four abstentions. The United Kingdom, Argentina, and Mexico voted with the United States; Iceland, Japan, Norway, Panama, South Africa, and the Soviet Union voted against the moratorium, and Canada, France, Denmark, and Australia abstained.

The quotas were substantially reduced, with fin whales cut back to 1,000, well below their maximum sustained yield.

On a world-wide basis, it is hard to believe that whale stocks could have fared any worse under a **laissez faire** fishery than they have under the regulation of the IWC. However, its present record in the North Pacific is better than the dismal history of the Antarctic, where it presided over the decimation of the blue whale, and has not yet taken adequate steps to protect the fin or sei whales.

The commission has approached whale management using time-honored fisheries management practices—area closures, seasons, size limits, and quotas. However, the total failure of the commission to observe even a semblance of maximum sustained yield until the 1971 meeting makes it impossible to judge whether these types of regulations would have been effective if properly implemented.

The current rate of recruitment for all whale stocks is probably well below the dollar value that will allow amortization of the costs of the present fleets maintained in the North Pacific by Japan and the Soviet Union. There seems to have been unspoken agreement among the major Japanese companies that it is better to hunt the stock to extinction than to reduce the effort to a lower level.

The experience of the United States at the 1972 meeting of the IWC makes it hard to believe that a large international commission representing regionally disparate interests can provide the necessary flexibility to manage stocks. There is little doubt that much is to be gained from an international data gathering body, especially if the data gathering and scientific evaluation can be obtained from a relatively neutral source. However, if a middle ground is to be found between an absolute moratorium of whale hunting of all species in the North Pacific and a continued take on a sustained yield basis (which will provide a chance to rebuild depleted stocks and maintain those that are still at optimum levels), it may be necessary to consider regional arrangements with the IWC, either for the North Pacific only or for the Pacific as a whole. It is obvious that under the present arrangement, the duty of the coastal state in species conservation, as required by the U. N. Convention on Fisheries and the Living Resources of the Sea, is difficult to implement and maintain.

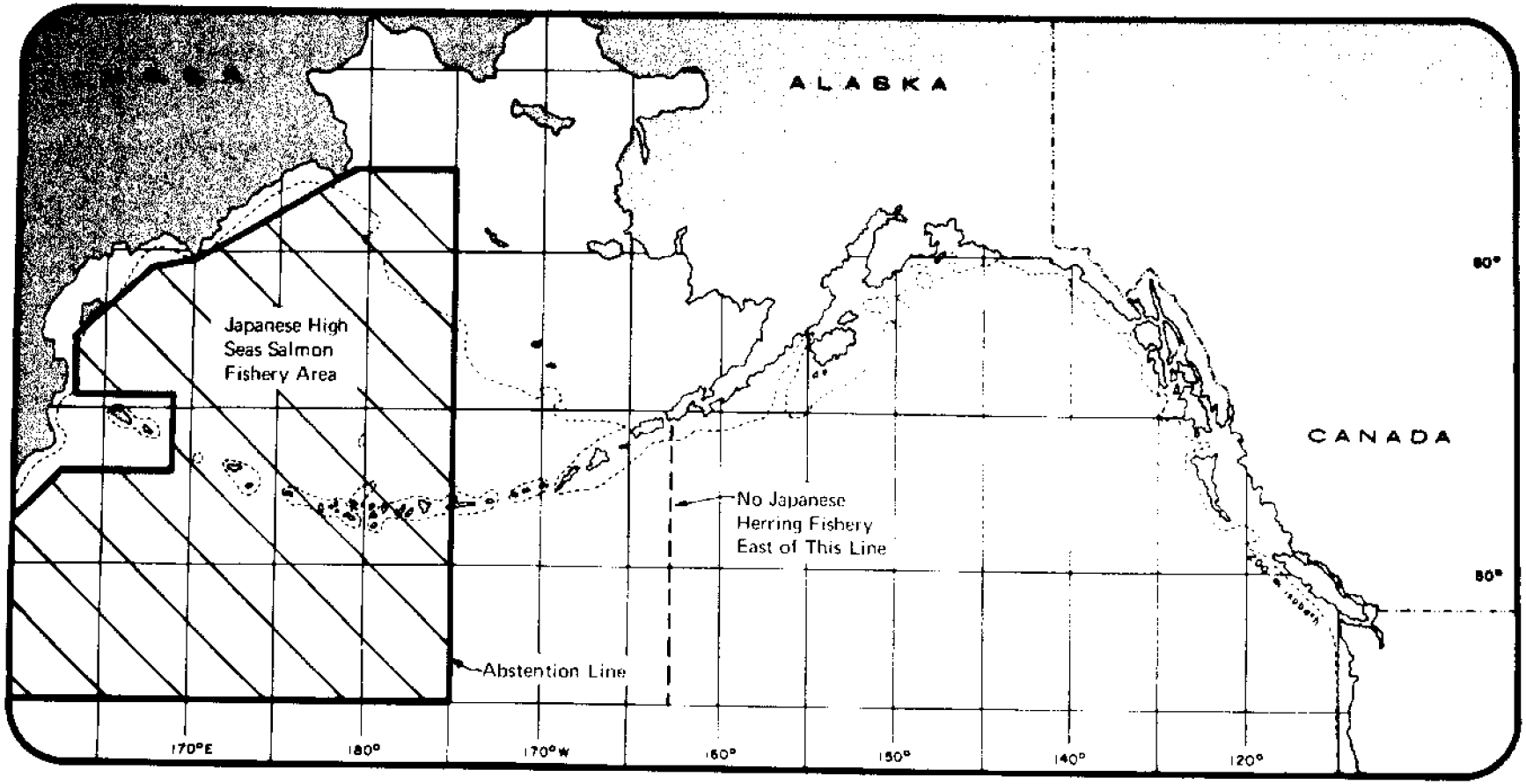


Figure 5 International North Pacific Fisheries Convention

International North Pacific Fisheries Convention

The International North Pacific Fisheries Convention, signed by Japan, Canada, and the United States, 1953, is regarded as the most important international regional regulatory mechanism presently in operation in the North Pacific. It is also the most controversial, since much of its control theory is based upon the principle of abstention.

The International North Pacific Fisheries Commission is responsible for implementing the terms of the Convention. It is headquartered in Vancouver, British Columbia, Canada.

The major original provisions of the Convention were that Japan would abstain from fishing for salmon in either the Bering Sea or the North Pacific Ocean east of 175 west longitude. Canada agreed to abstain from fishing for salmon east of that line in the Bering Sea. Japan also agreed not to take halibut or herring of North American origin off the coasts of Canada and the United States, except in the areas of the Bering Sea west of where such fishing was being conducted by either nation. (See Figure 5.)

Abstention was a new concept in international fisheries when introduced in this Convention. It was based on the belief of the North American powers that the nation which provided the research and regulation necessary to maintain high levels of productivity in coastal or anadromous fisheries should be entitled to the full utilization of those resources. Other nations thus are entitled to participate in the fishery only when the coastal state managing the stock is unable to utilize it to its maximum sustained yield.

The Convention, while aimed primarily at protecting the North American salmon fisheries from high seas fishing, covers all fisheries of joint interest. To understand the original provisions of the Convention and their subsequent modifications, it is necessary to review briefly the development of the North Pacific salmon and herring fisheries. (A review of the halibut fishery is provided in the previous section on the IPHC.)

Japan had conducted a coastal fishery for salmon, both in rivers and immediately offshore, probably since its islands were first inhabited. Japanese fishermen extended their operations to the coast of Siberia as early as the seventeenth century, and were probably fishing Kamchatkan salmon runs by the end of that century. Dried salmon was an important export item by 1715. The few Russian settlers who had reached the Sea of Okhotsk in 1639 and the sparse aboriginal population of Siberia provided little competition for salmon runs, which were described as "coming from the sea in such numbers that they stop the course of the rivers and cause them to overflow the banks."[23]

By the time that Russian and Japanese imperialistic ambitions began to clash in the latter decades of the nineteenth century, Japanese fishermen had come to regard the Siberian fishing grounds as home waters.

Japanese fishing rights were confirmed by the Treaty of Portsmouth in 1905, following their victory in the Russo-Japanese War. Rights to fishing lots on the beaches and to fish in Russian coastal waters for salmon were confirmed by conventions and agreements until World War II ended. During the period from 1920 to 1941, about 40 percent of the total Japanese salmon came from Russian waters; 25 percent came from the Kamchatkan fishing lots alone.[24]

Following its defeat in World War II, Japan was forced to fall back on the areas enclosed by the MacArthur Line and to utilize heavily its home fisheries and those immediately offshore. By 1952, the Japan sea fisheries were producing only 600,000 fish per year, far below the normal range of three to twelve million for this fishery.[25]

23. S. P. Krasheninnikov, *The History of Kamschatka*, revised English ed. (Chicago: Quadrangle Books, Inc., 1962), p. 143.
24. G. Ireland, "The North Pacific Fisheries," *American Journal of International Law*, 36:400-424.
25. International North Pacific Fisheries Commission, *Statistical Yearbook*, 1958.

The signing of the 1953 Convention allowed Japanese offshore fisheries to again expand into the North Pacific as far east as the abstention line (175W). The Japanese high seas salmon fishery had begun early in this century and confined itself essentially to the western North Pacific areas east of the Kuriles and Kamchatka. There was a brief intrusion into Bristol Bay in 1937 which met strong American opposition.[26]

This eastward extension of Japanese effort was the beginning of a continuing Japanese effort in Alaskan waters. When the Convention was negotiated, it was felt that Japan would be fishing exclusively Asiatic stocks in this area, and that adequate protection was afforded the great red salmon runs into Bristol Bay. Subsequent research efforts and observations over the next two decades revealed that this was not substantially correct, and that large numbers of red and king salmon from North American stocks migrate west of the abstention line. Other North American salmon stocks seem to receive adequate protection.

In 1956, the Japanese high seas salmon fishing fleet moved into the Bering Sea where it operated from motherships. Each year since 1956, the fleet has been actively fishing in the North Pacific and the Bering Sea between May and August. It begins the season concentrated near the abstention line and gradually disperses westward towards the Soviet coast, except that in peak years of the Bristol Bay sockeye run, the fleet follows the run eastward toward the abstention line.

The fleet grew from three factory ships and fifty-seven catcher boats to sixteen factory ships and 506 catchers by 1956. It decreased to eleven factory ships and 369 catcher boats by 1962. That level generally has been maintained in recent years, with 369 catchers reported in 1971 and ten factory ships in 1972.

The catch of salmon by the high seas mothership fleet has fluctuated from totals of two million salmon in 1952 to a high of 64.1 million in 1955, and has experienced a general decline since that date.[27] Other high seas salmon are taken by a land-based fleet of catcher boats operating eastward from Hokkaido.

The catch distribution of North Pacific salmon is shown in Table 4. It is generally accepted that these salmon occupy common high seas areas to some degree. The current intermingling of stocks is best summarized by the National Marine Fisheries Service as follows:

> 1. Western Alaska sockeye (reds), possibly western Alaska chinooks (king salmon) are vulnerable to the Japanese mothership fishery over a large area west of the abstention line (175W).
> 2. The abstention line provides practically 100 percent protection from high seas fishing west of that line for all North American salmon stocks other than those originating in western Alaska. (These would be primarily the Bristol Bay runs and those of the Yukon and Koskokwim rivers.)
> 3. Asian chums (dog salmon) extend far into the Gulf of Alaska and Asian pinks (humpbacks) migrate as far east as the Alaska Peninsula.[28]

It was estimated in 1971 that the potential catch of a high seas gill net fleet the size of the present Japanese mothership fleet, operating outside a 200-mile limit from the coastline in the Gulf of Alaska and fishing for a sixty day period, would be twenty-three million fish. This compares with the reported average of 2.5 million North American salmon presently taken by the Japanese mothership fleet west of 175W. It was also the best judgment of U. S. biologists at this time that every American stock of salmon and steelhead of any significance ranges outside of this 200-mile line.[29]

Thus, western Alaska runs of sockeye (reds) and chinooks (kings) are currently the main concern of the United States and the State of Alaska in regard to the protection offered by the present policy of abstention. Over the fifteen-year period from 1954 through 1968, 22.2 percent of the western Alaska sockeye and 18.5 percent of the chinook salmon were taken west of the abstention line by the Japanese high seas fishery, while only 4.4 percent of the total catch of the other species were so caught. The catches of sockeye in western Alaska for the three highest years of the mothership fishery

26. Hirosho Kasahara, "Fishery Resources of the North Pacific Ocean," H. R. Macmillan Lectures on Fisheries, University of British Columbia, Vancouver, B. C., Canada, 1961.
27. Chitwood, *op. cit.*, p. 14.
28. R. A. Fredin, *Ocean Distribution of Salmon and Their Vulnerability to High Seas Fishing, A Summary of Information Prepared for the United States Section of the International North Pacific Fisheries Commission* (Seattle: National Marine Fisheries Service, North Pacific Fisheries Research Center, September 1971), p. 2.
29. *Ibid.*, p. 3.

Table 4
North Pacific Salmon Catches 1954-68
(Totals shown in thousands of fish)

National Fishery	Total Catch	Average Catch	Percent of Total Catch
All North Pacific			
Japan High Seas	1,150,629	76,708	38.1
Japan Coastal	99,623	6,661	3.3
Japan Total	1,250,262	83,369	41.4
USSR	640,750	42,717	21.2
Alaska	702,314	46,821	23.2
Other U. S.	104,307	6,954	3.5
U. S. Total	806,621	53,775	26.7
Canada	324,727	21,648	10.7
North Pacific Total	3,022,360	201,491	100.0
North America			
Japan High Seas (2)	36,910	2,461	3.5
Alaska	702,314	46,821	60.1
Other U. S.	104,307	6,954	8.9
Canada	324,727	21,648	27.8
North American Total	1,168,258	77,884	100.0
Asia			
Japan High Seas (1)	1,113,719	74,248	60.1
Japan Coastal	99,633	6,661	5.4
USSR	640,750	42,717	34.5
Asian Total	1,854,102	123,607	100.0

Source: National Marine Fisheries Service, Northwest Fisheries Center

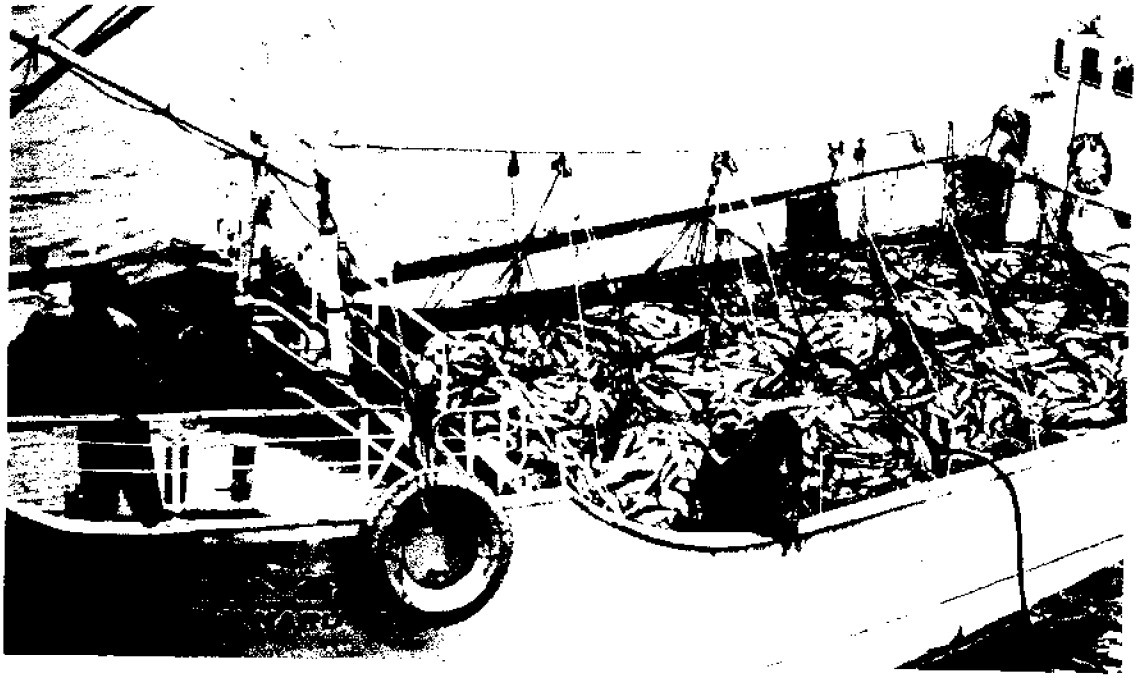
1. Catch of mothership high seas and land-based high seas fleets.
2. Catch of mothership fleet only.

were 49.3 percent in 1957, 32.6 percent in 1961, and 20.2 percent in 1965. The lowest sockeye catch by the Japanese in 1956 was 6 percent of the western Alaskan total.[30] The above percentages include the Japanese high seas catch of immature salmon, which are part of the succeeding year's run.

During the three years when western Alaskan sockeye runs were at their lowest, the Japanese take was 10.7 percent in 1958, 24.2 percent in 1963, and 35.3 percent in 1968. The great fears of many biologists and fishermen are (1) that an excessive take will be made by the high seas fleet during a period of low productivity, which will leave few salmon for Alaskan fishermen, and (2) that some runs may be fished below the level of adequate escapement.

Herring were included in the INPFC agreements, because historically they have been the most heavily exploited species in the North Pacific, although in recent years the catches of pollock have far outstripped those of the herring fishery. The Convention was aimed at protecting the Canadian herring fishery off Vancouver Island, which had been thought to be overfished in the period immediately prior to World War II. The Canadian catch at that time was around 100,000 tons. In the early 1960s, it sustained catches of over 200,000 tons, averaging 215,000 tons from 1958 to 1963. However, the erratic nature of the catch had led the government to introduce conservation measures in the 1930s and the Canadian herring have been closely

30. *Ibid.*, Table 1.



Gill nets filled with salmon from the Bering Sea aboard a Japanese ship.

regulated since that time. Despite this regulation, the Canadian herring stocks entered a period of serious decline in 1965.

Similar declines occurred in the Japanese herring stocks, although that was a long, slow process dating from the beginning of the century. The Japanese decline has been attributed to a combination of heavy fishing and environmental changes in the spawning areas.[31]

A similar decline in the herring stocks along the Siberian Coast in the 1950s has been attributed by Russian scientists to overfishing and changing oceanic conditions.[32]

The only known herring stocks of major magnitude now extant in the North Pacific are those of the Bering Sea. These are being harvested heavily by the Soviet Union (467,000 metric tons in 1970, of which 117,202 tons were taken from the eastern Bering), and to a lesser degree by Japan (25,353 metric tons in 1970 from the eastern Bering). The average take in the eastern Bering between 1967 and 1971 was 67,118 metric tons for the Soviet Union and 14,117 metric tons for the Japanese.[33] There are no U. S. or Canadian herring fisheries in the Bering, except for small-scale U. S. operations in Bristol Bay and the Yukon-Kuskokwim estuaries that take less than seventy-five tons per year.

Since the United States was not utilizing the Bering Sea herring stocks, Japan claimed in the preliminary INPFC negotiations that abstention should not apply to those stocks, and Bering Sea herring were not listed in the INPFC Annex. In 1959, Japan secured the right to fish herring off the entire coast of Alaska; previously Japan had been restricted to areas west of the tip of the Alaska Peninsula. In 1961, this right was extended to the rest of the North Pacific, except for the areas off the coast of British Columbia where Canadian fishermen were fully utilizing the stock. In 1962, INPFC recommended removal from the Annex for herring off the coast of Canada north of 51°66" North and west of the Queen Charlotte Islands.

The current problem with herring control is that there is no management arrangement between the principal utilizer of the stock, the Soviet Union, and the United States, whose duty it is to implement conservation measures under the U. N. Convention on Fisheries. The United States is the coastal state for the herring stocks of the eastern Bering.

From the Japanese viewpoint, the most important principle in the negotiations leading to the Convention of 1952 was whether any of the

31. Kasahara, *op. cit.*
32. P. A. Moiseev, *Biological Basis of Fisheries in the Western Pacific Ocean*, trans. Joint Publications Service, Office Technical Services, U. S. Department of Commerce, Washington, D. C.
33. Dr. Harry L. Rietz, Alaska Region Director, National Marine Fisheries Service, 18 March 1974: personal communication.

participating states had acquired any right or privilege regarding fishing on the high seas. Most important for the United States was the principle of abstention, which stated that under international law the right to exploit high seas fisheries should be waived for those species which were being fully utilized by the coastal state in its coastal fisheries.

The U. S. position on abstention was and is that states which have maintained fish stocks at their most productive level through effort and expenditures on research and management and through restraints on their own fishermen should have primary rights to the harvest of those stocks. Under this condition, an increase in effort would not be expected to increase the yield substantially, and, indeed, increases in effort may damage the management of the fishery.

The Japanese oppose this position and have consistently raised the following four objections to abstention: (1) The 1953 Convention was negotiated while Japan was still under allied military occupation and could not adequately protect its own interest; (2) Japan advocates as a basic doctrine freedom of the seas; (3) Japanese fishing relations with other nations are weakened by adherence to abstention, and (4) Japan will engage in more reliable conservation measures if the abstention principle is dropped by the United States.[34]

Neither the United States nor Japan has changed its position to any appreciable degree. The United States is not likely to relinquish abstention, especially since it has apparently been a more successful management regime than the quota system under which Asian salmon stocks are managed. It is difficult for most managers of North American salmon to accept a system under which 60 percent of the catch would occur on mixed high seas stocks. A review of what is known of the escapement problems on Asian stocks substantiates this view.

It is difficult to believe that the Japanese will change their high seas fishing operation in the Bering to a point which would guarantee North American stock protection, since they believe that this would adversely affect their harvest of Asian stocks. In any case, Japan argues that both Canada and the United States fish on mixed high seas stocks to a greater degree than it does.

The U. S. argument is that Japan has agreed to abstain from fishing North American salmon and should adjust its fishing operations in the Bering accordingly. Generally, the United States holds that: (1) The high seas fishery takes immature salmon; (2) the high seas fishery makes biological control more difficult, and (3) excessive numbers of salmon are injured due to dropouts. In Commission meetings in 1965, the United States held that up to 30 percent of the fish caught in ocean gill nets were being lost as dropouts, and that 20 percent were immature when taken by the high seas fishery.[35]

Despite the constant bickerings over the high seas salmon take, the INPFC could be considered as successful in the results it had achieved on salmon management until 1970. Since that year, the Commission has been ineffective in achieving any curtailment of high seas fishing efforts on Bristol Bay sockeye by the Japanese. Results of the research conducted by the Alaska Department of Fish and Game and the Fisheries Research Institute of the University of Washington indicated that 1972 and 1973 were years of poor catches; the worst expectations were exceeded when the 1973 Bristol Bay run proved to be the lowest on record. Although the Japanese delegation to the Commission was advised of this and expressed a desire to cooperate in conserving the Bristol Bay sockeye runs, there is little evidence that Japan has made any effort to limit its high seas fishing for Bristol Bay salmon.

The failures in management of halibut and herring can be attributed only in part to the INPFC. The failure to control the taking of immature halibut in the Bering Sea is largely due to the fact that the Commission was not given overall species authority.

The major flaw in the INPFC is in the original concept that successful management of a single stock can be achieved without control over the fishing of other stocks. The massive intrusions of Soviet and Japanese fleets in the eastern Bering was a factor for which the treaty did not provide and for which the Commission had no regulatory tools. The failure to engage in real cooperative efforts on Bristol Bay sockeyes probably reflects that the primary interest of the Japanese is to fill the quotas established in their negotiations with the Soviet Union regardless of the critical conservation problem this creates for the North American stocks intermingled with the Asian salmon.

34. Ralph W. Johnson, "The Japan-United States Salmon Conflict," *Washington Law Review*, 43:1-44.
35. International North Pacific Fisheries Commission, *Annual Report 99;* Alaska Department of Fish and Game, *Information Leaflet No. 82,* June 15, 1966.

U. S.-Japan and U. S.-USSR King Crab Agreements

The bilateral agreements on king crab between the three major powers utilizing that stock grew out of a combination of factors, primarily gear conflicts with American fishermen; a fear that Soviet and Japanese fishing methods were destroying the stock, and the rapid growth towards total stock utilization by the U. S. fishing fleets based at Kodiak and other Alaskan ports.

King crabs were first commercially processed by Japan in 1892. The Russians began to fish for king crab in their coastal waters early in the 1900s, by which time the Japanese had begun to utilize the stocks off Kamchatka to some degree. These Japanese fishing rights were confirmed in 1905 in the Treaty of Portsmouth, ending the Russo-Japanese War. Article II of the treaty stated: "Russia engages to arrange with Japan for granting to Japanese subjects right of fishery along the coasts of the Russian possessions in Japan, Okhotsk, and Bering Seas."[36]

Despite the imposition of a twelve-mile limit by Russia in 1911, the Japanese fishing rights were expanded in scope during the intervention of 1918 to 1922, following the Bolshevik Revolution. They continued practically unchanged until the Japanese defeat in World War II in 1945.

Japan entered the eastern Bering Sea king crab fishery in 1930, establishing the first fishery off Alaska by an Asian nation since the cession of Alaska to the United States by Russia. The fishery involved one factory ship, and took about one million king crabs.[37]

This fishery continued through the 1939 crabbing season, peaking at two million crabs in 1933, and declining to about 250,000 in 1939. Tangle nets were the principal type of gear used; a set of nets covered about ten square miles of seabed. During this period, the Japanese fleets began fishing north of Umnak and worked their way eastward along the north coast of the Alaska Peninsula.

The United States conducted some research on fishing of king crab in the Bering Sea in the late 1930s. This effort was interrupted by World War II.

Following the war, Wakefield Fisheries and Libby, McNeil, and Libby began to fish the eastern Bering. Wakefield discovered how to process frozen, picked meat and frozen meat in the shell. This proved to be a substantial improvement over the canned product, and set the stage for the tremendous Alaska king crab boom.

Preliminary efforts at crab fishing and processing began in Kodiak in 1948. By 1950, the Kodiak catch was 64,882 pounds. It increased steadily to 19 million pounds (1.9 million crabs) by the 1960-61 season, and then advanced precipitously to 95 million pounds (11.2 million crabs) in the 1965-66 season.[38]

Signing a peace treaty and the negotiation of the International North Pacific Fisheries Convention made it possible for Japan to resume the eastern Bering Sea king crab fishery in 1953 with one factory ship. Japanese efforts from the end of World War II had been curtailed by the MacArthur Line, which restricted fishing to the areas immediately around the home islands of Japan. Under the convention, Japan agreed to abstain from fishing halibut, herring (later removed), and salmon, but she was free to fish for king crab anywhere outside American territorial limits.

Another factor affecting the move back into the eastern Bering was the four-year gap between the 1953 Convention and the negotiation

36. Shigeru Oda, *International Control of Sea Resources* (Leyden, Netherlands: A. W. Sythoff, 1963), pp. 27-28.

37. *Ibid.*, p. 9.

38. Alaska Department of Fish and Game, *Alaska Catch and Production, Commercial Fisheries Statistics*, 1960-1971 (odd number years).

of the Northwest Pacific Fisheries Convention of 1956 between Japan and the Soviet Union. While Japan considered that the 1953 Convention cancelled the MacArthur Line, the Soviet Union held that the fishing restrictions were still in effect. The Soviets continued to seize Japanese fishing boats and imprison their crews when the Japanese attempted to return to their old fishing grounds off the coast of Siberia. Indeed, the rate of seizure after 1952 was five times the rate prior to the negotiation of the peace treaty between Japan and the United States.[39]

The Japanese resumed their eastern Bering fishery, using both tangle nets and trawls to take the king crabs. In 1955, trawling for king crab was discontinued and tangle nets alone were used. This reduced the gear conflict somewhat with American fishermen, but U. S. fishermen still considered tangle nets an undesirable way to harvest the stock. Since the tangle nets are set in patterns that cover an area of ten square miles and soak from one to six weeks, in effect they rule out the use of pots in their fishing areas.

As a result of Japanese pressure north of the Aleutian Islands, the American fishermen who had pioneered this area after World War II moved their operations to new grounds south of the island chain.

Meanwhile, the 1956 Convention between Japan and the Soviet Union resulted in an agreement on Kamchatkan king crab in 1958 which divided the catch 3 to 2 in favor of the USSR. This ratio was amended to 7 to 4 in 1965 and to 2 to 1 after 1969.[40]

These ratios have maintained a relatively steady catch for the Kamchatka area, with a joint take of 800,000 boxes of king crab in 1958 and a quota of 648,000 boxes in 1969. The quota has been held between 630,000 and 650,000 boxes since 1960.

King crab utilization in the eastern Bering and the Aleutians continued to increase rapidly. The American effort increased from 140,000 pounds in 1947 to catches exceeding six million pounds between 1957 and 1961. Japan increased its catch in the eastern Bering to 70,000 twenty-four pound cases (about seventeen million pounds catch weight) in 1959, and 80,000 cases (about 19.5 million pounds live weight) in 1960.[41] There was insufficient research at that time to really know what effect the two fishing efforts were having on the total stock.

The Soviet Union began to fish king crab on the Continental Shelf of the eastern Bering in 1959 with one factory ship and three trawlers that were setting tangle nets. A fleet of the same size returned in 1960, but the next year two factory ships—one of which was of a new multipurpose class—entered the fishery. The initial Russian catch of 620,000 crabs (about six million pounds) rose to over 3.4 million (about twenty-four million pounds) in 1961. As Table 5 shows, a bad situation existed by 1961 with a steeply rising effort by all fleets.

Table 5
King Crab Catch (million pounds)
For Eastern Bering and Aleutian Island Areas

	United States	Soviet Union	Japan	Total
1953	2.3	-	8.9	11.2
1959	6.2	4.3	9.0	19.5
1961	4.1	24.0	21.2	49.3

Sources: Alaska Department of Fish and Game; Philip E. Chitwood, *Japanese, Soviet, and South Korean Fisheries off Alaska*, U.S. Fish and Wildlife Service, Circular 310, Washington, D.C., January 1969.

This situation continued to compound itself over the next three years, during which the U. S. catch rose to thirty million pounds in the 1963-64 season and to 41.4 million in 1964-65.[42] A new Japanese quota was set of 235,000 cases for 1963 and 1964, which resulted in catches of 5.5 million crabs (thirty-three million pounds) in 1963 and 5.9 million crabs (35.4 million pounds) in 1964.[43] Meanwhile, due to a declining catch per unit effort, the Soviet take had dropped somewhat to about 2.4 million crabs in 1964 (14.4 million pounds).[44] The take for the eastern Bering and Aleutian Island areas had thus risen to a total of about 68.6 million pounds in 1963 and 86.3 million

39. Oda, *op. cit.*, p. 27.
40. Shigeru Oda, "Japan and International Conventions Relating to North Pacific Fisheries," *Washington Law Review*, 43 (October 1967):69-70.
41. Chitwood, *op. cit.*, p. 9.
42. Alaska Department of Fish and Game, *Alaska Catch and Production, Commercial Fisheries Statistics*, 1960-1971 (odd number years).
43. Chitwood, *op. cit.*, p. 9.
44. *Ibid.*, p. 27.

Lost tangle gear being retrieved by the U.S. Coast Guard.

pounds in 1964. Even the most optimistic fishermen and processors of all three nations were getting worried.

The United States was faced with a choice of two approaches in solving the king crab problem: (1) Attempting to limit all foreign fishing in the eastern Bering and Gulf of Alaska (the area approach); or (2) basing negotiations on king crab only (the species approach).

Although the United States was soon to pass (in 1966) a twelve-mile bill establishing a contiguous zone, such action was not possible in 1964. The concept of a twelve-mile sea had been thoroughly explored at the 1960 Law of the Sea Conference, which was called to try to resolve this issue, but which ended in a standoff between the Communist and western blocs at the 1958 Law of the Sea Conference.

In 1960, the United States and Canada proposed a six-mile territorial sea and a six-mile contiguous fishing zone, which came close to securing acceptance.

The Soviet Union would not relinquish its position on the twelve-mile limit, while Japan continued to hold fast to the historic three-mile limit. Thus, the concept was expounded for the contiguous zone approach, but it took six years of effort to obtain congressional approval.

Another possible means of extending baselines was to develop a special regime for archipelagos which would treat the Aleutian Islands as a single unit. This regime would allow the baseline for the territorial sea to be drawn around the entire group of islands, enclosing large areas between the islands. This concept was not acceptable to the United States at that time, because it would close too many strategic straits to naval and merchant shipping. Also, the potential effect of such a regime on other U. S. fisheries has not been studied in sufficient depth to remove fears concerning its effect.

Another possibility for extending U. S. control over the king crab resource was to try to expand historic bay concepts in Bristol Bay. This, too, was contrary to U. S. military strategic needs as they were then determined.

In any case, neither the twelve-mile limit, the archipelago-closed sea, nor the historic bay approach would provide the kind of regulation of the king crab fishery that was needed to control exploitation. As a result, the United States began to concentrate on reaching agreement on catch limits on king crab and began to search for a vehicle through which to exercise control.

Two other international agreements existed which might serve as a basis for a U. S. position —the convention on Fishing and Conservation of the Living Resources of the High Seas and the Convention on the Continental Shelf—both of which were passed at the 1958 meeting. Unfortunately, Japan had not adhered to either convention, but the USSR and the United States both were signatories to the latter.

The Convention on Fishing and Conservation of the Living Resources of the High Seas expressed four broad principles: (1) There is a universal duty to conserve; (2) there are special interests of the coastal state; (3) voluntary negotiation and compulsory arbitration are necessary in dealings between nations, and (4) biological criteria can be developed and should serve to guide conservation policy.

As the world's preeminent fishing nation, Japan could not accept the second and third

principles, and was little inclined to enter negotiations which would imperil her position on fishing other eastern Bering and Gulf of Alaska stocks. Having accepted abstention on salmon, herring, and halibut in the 1953 North Pacific Fisheries Treaty, Japan felt that her options in the eastern Bering were already circumscribed, but was willing to negotiate an agreement on king crab only.

During the 1958 Law of the Sea Conference, the United States and the Soviet Union had found themselves in rare accord on several issues. Both accepted the 200 meter line as a practical limit for underwater work in the foreseeable future. Most important for U. S. interests in 1964, the Soviet Union had desired to have crustaceans included among the creatures of the continental shelf.[45] However, the final definition incorporated in the Convention was that continental shelf creatures must be sedentary species, immobile on or under the seabed, and unable to move except when in contact with the seabed or subsoil.

The United States, buttressed by motion pictures of crabs moving on the floor, undertook to prove that the king crab was a creature of the continental shelf, and was therefore under the jurisdiction of the coastal state for conservation purposes. Japan maintained during the negotiations that king crab left the seabed and swam during some periods.

Congressional and legal support for the U. S. position on the continental shelf resources was gained by passage of Public Law 88-38, the Bartlett Bill, in May of 1964. This law made it illegal for a foreign vessel to take part in fisheries within the U. S. territorial sea or to take any resource of the continental shelf, unless as part of an international agreement to which the United States was a party. The law established penalties for violation and made possible the use of the U. S. Coast Guard for fisheries enforcement over a much wider range of incursions by foreign fishing fleets. Since almost all of the eastern Bering king crab areas fall within the 200-meter line, the fishery was well protected by this act.

The agreement with Japan covering the king crab fishery in the eastern Bering was negotiated in November of 1964. Japan continued to contend that king crab are a high seas resource, and the agreement was concluded without prejudice to the position of either party for future international negotiations. The agreement included the following conditions:

> Limited Japanese catches to an annual quota, with the initial quota set at 185,000 cases for the 1965 and 1966 seasons.
>
> Provided an area north of Unimak Island for the exclusive use of crab pots for king crab fishing, with other gear allowable for other species. (See Figure 6.)
>
> Restricted Japanese gear by limiting the mesh size of tangle nets and not allowing concurrent use of pots and tangle nets.
>
> Set a minimum size limit for king crab to be taken.
>
> Allowed retention of male king crab only.

In essence, the agreement allowed Japan to continue her historical king crab operations in the eastern Bering within limits, while the rapidly expanding American effort at Kodiak and in the Aleutians was permitted to continue without limits, except those imposed by domestic regulation. The U. S. right to the stock was clearly established.

Meanwhile, the burgeoning king crab fishery based on Kodiak had been harassed since 1960 by USSR trawlers fishing primarily for ocean perch. By 1963, the Soviet fleet in the Gulf of Alaska was composed of 135 side trawlers, ten factory trawlers, and numerous accompanying ships. The trawls constantly disrupted the crab pots of the Alaskan fishermen, who continually sought aid from their state and federal governments.

In December of 1964, agreement was reached with the USSR that closed six areas off Kodiak to trawling during periods of intensive king crab fishing. The agreement was to last for three years. Special provision was made for small shrimp trawlers from Kodiak to operate in the areas restricted to crab pot fishing.

This agreement was followed closely by a king crab agreement in February of 1965 which was basically the same as that made with the Japanese, except that a lower annual quota of 118,600 cases was assigned. The king crab agreement ended the short-lived Soviet king crab fishery in the Gulf of Alaska, which had taken 2,200 short tons of crab in June and July of 1963 and 1,600 short tons in a three-week fishery in April of 1964.

45. United Nations, *United Nations Conference on the Law of the Sea*, Official Record, 7 vols., (A/Conf. 13, U. N. c.4/6, 59) 23 meeting, 28 March 1958.

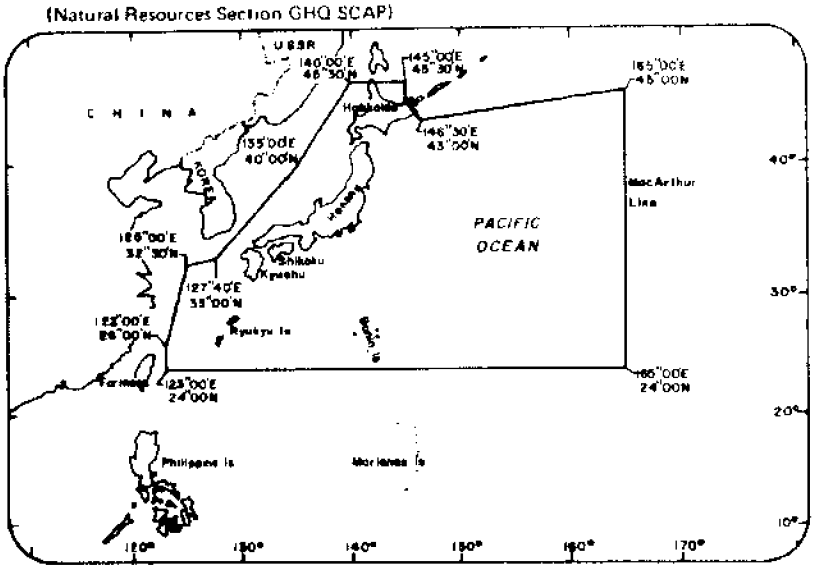
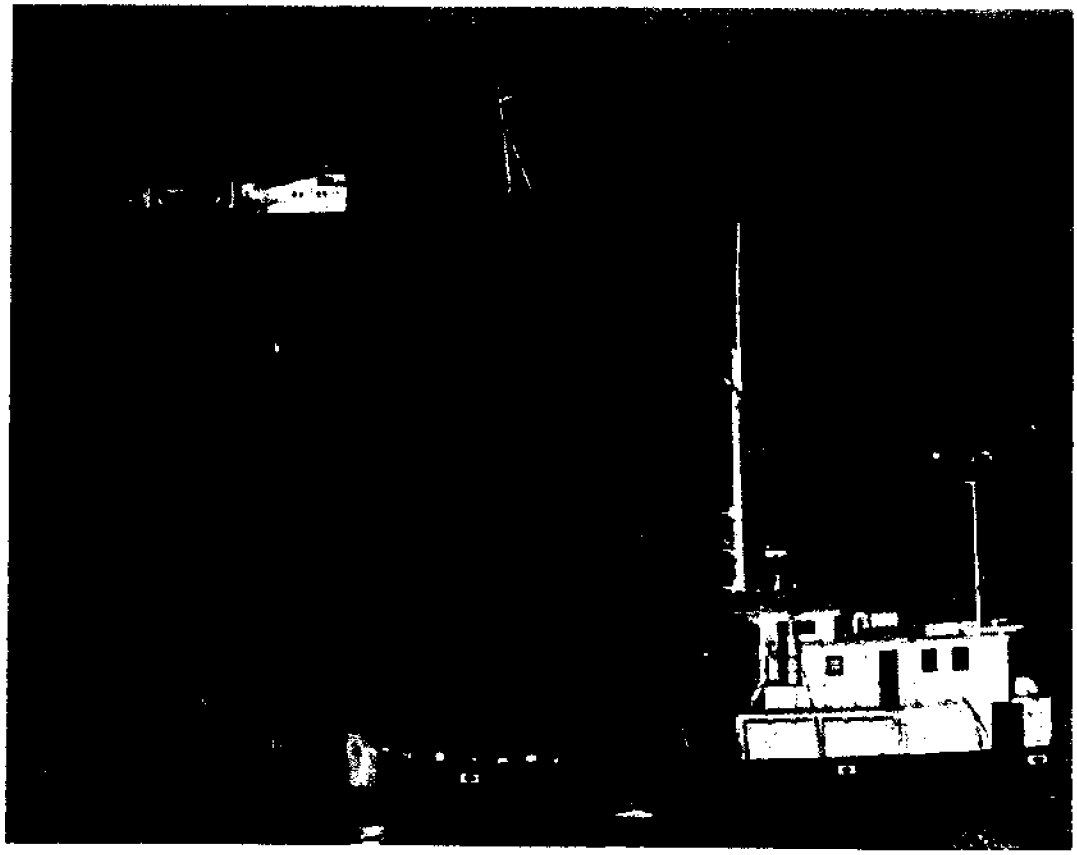


Figure 6 Supreme Command Allied Powers Authorized Areas for Japanese Fishing, June 22, 1946.

An American crab boat and a Soviet side trawler fishing is close proximity. Gear conflicts were one of the primary factors in bilateral agreements on king crab.



As a signatory to the Convention of the continental shelf and a strong promoter of the position that crustaceans are a creature of the shelf, the Soviet Union had a historic impetus to recognize the position of the United States as the coastal nation having responsibility for instituting conservation measures on the king crab stocks. The Japanese had to recognize this position in their negotiations with the Russians leading to the 1956 pact, and it was reinforced in the annual renegotiations of the treaty. Japan's agreement to a quota in the eastern Bering in 1964 also had its effect in the 1965 negotiations on the Kamchatka king crab fishery, when the Soviet Union secured a more favorable ratio.

In 1966, the King Crab Agreement with Japan was extended for two years, with a quota reduction to 163,000 cases for the 1967 and 1968 seasons. A few months later, in February of 1967, a new agreement was reached with the Soviet Union limiting their quota for the next two years to 100,000 cases per annum.

By the spring of 1967, competition between the Soviet and Japanese fleets in the eastern Bering was causing severe gear conflicts. As a result, the area was divided into specific zones for each country, to take effect in the 1968 season. (See Figure 7.)

This agreement was a step forward in preventing wasteful fishing methods and avoiding gear concentrations in the better crabbing areas.

In October of 1966, the U. S. Congress passed Public Law 89-658, establishing the contiguous zone. The effect of the U. S. establishment of the nine-mile contiguous fishery zone adjacent to the three-mile territorial sea was to make illegal certain existing Soviet and Japanese operations in the eastern Bering and the Gulf of Alaska. The only major king crab area affected was located around the Pribilof Islands, and in May of 1967, a two-year agreement was negotiated which permitted Japan to continue king crab fishing in that area. In exchange, Japan agreed to stay out of the six crab pot zones surrounding Kodiak Island and the south Unimak and eastern Fox Islands crab grounds from September through February.

In February 1967, an agreement had been concluded with the Soviet Union to permit fishing in the contiguous zone for species not used by Alaskan fishermen in the following three areas: The Gulf of Alaska west of Yakutat Bay; the central Aleutians, and the far western Aleutians.

By the summer of 1968, it had become apparent that existing quotas would not eliminate the possibility of serious damage to stocks that were already in apparent decline. (See Figure 8.)

The Soviet and Japanese quotas permitted them to take 263,000 cases (about 64 million pounds). The U. S. catch increased from 2.5 million pounds in 1967 to eight million in 1968. The continued decline of the Kodiak area stocks indicated that more American king crab vessels could be expected to fish in the Bering Sea for a substantial part of their annual catch.

A spectacular growth of the Kodiak king crab industry began after 1960, and by 1965 had attracted substantial investment in the king crab fishing fleet. The total catch increased from 41 million pounds to 95.8 million pounds in the 1964-65 season, while the average catch per crab pot remained the same. In the 1966-67 season, the average catch per pot declined to thirty-six crabs, and the total catch declined to 73.1 million pounds, the first reversal in total catch since the beginning of the Kodiak king crab industry. The following season, the catch continued to decline to an average of twenty-six crabs per pot and a total of 43.9 million pounds. The Kodiak industry obviously was in trouble.[46]

An increasing number of Kodiak boats that were large enough to fish the stormy waters of the Aleutians and the Bering Sea moved westward to catch enough king crab for a successful season. The growing American participation in the fishery in those areas was recognized in the next bilateral negotiations with Japan in November of 1968.

Japan's king crab quota in the eastern Bering was reduced to 85,000 cases, slightly over half of its previous quota of 163,000 cases. Two more loading areas within the U. S. contiguous zone were granted to the Japanese. Japan also agreed to limit its catch of tanner crab to sixteen million crabs, which was the first limitation established for this species in bilateral negotiations.

46. Alaska Department of Fish and Game Statistics.

(National Marine Fisheries Service, Juneau, Alaska)

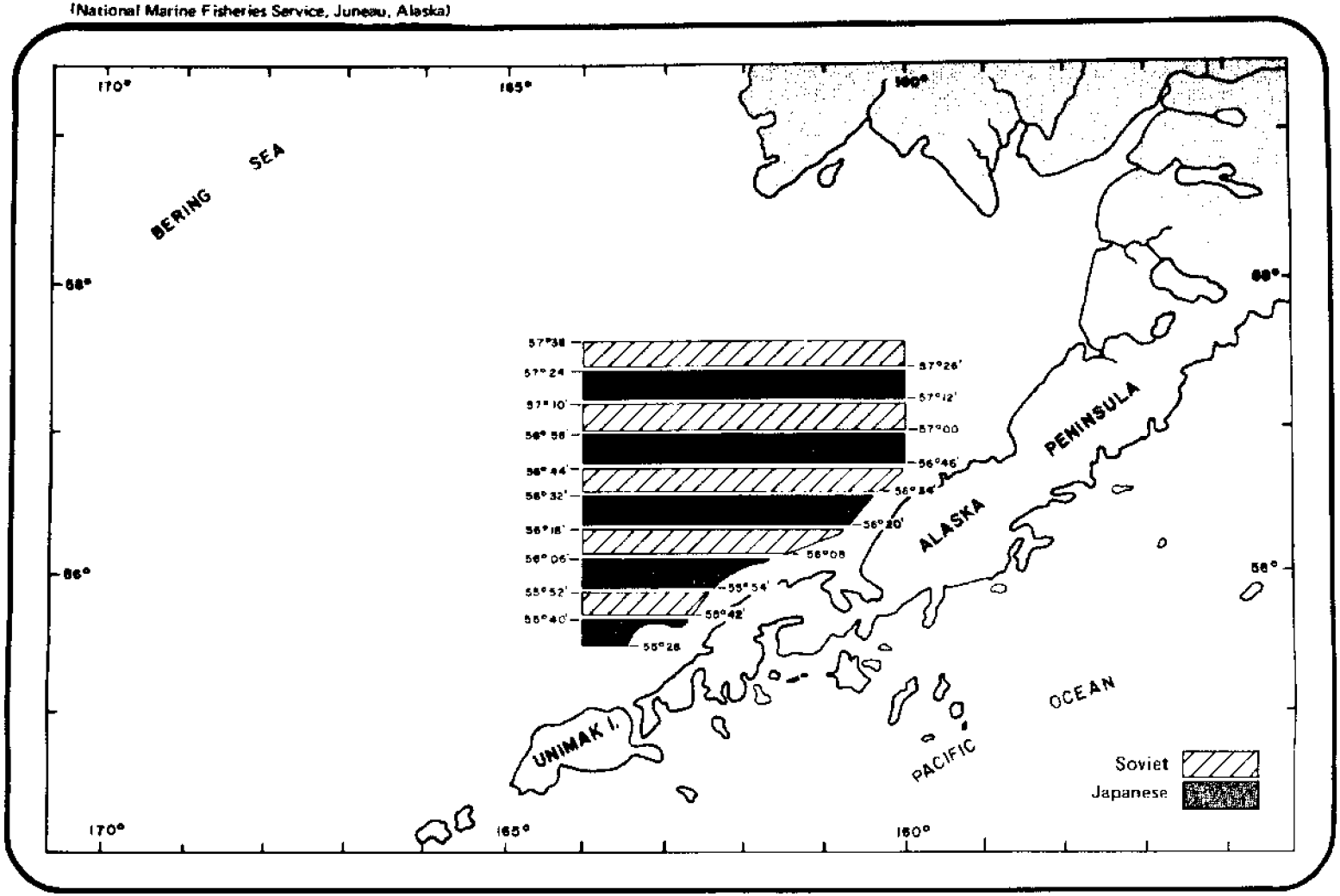


Figure 7 1968 Japanese and Soviet king crab fishing areas established by 1967 Japan-U.S.S.R. agreements.

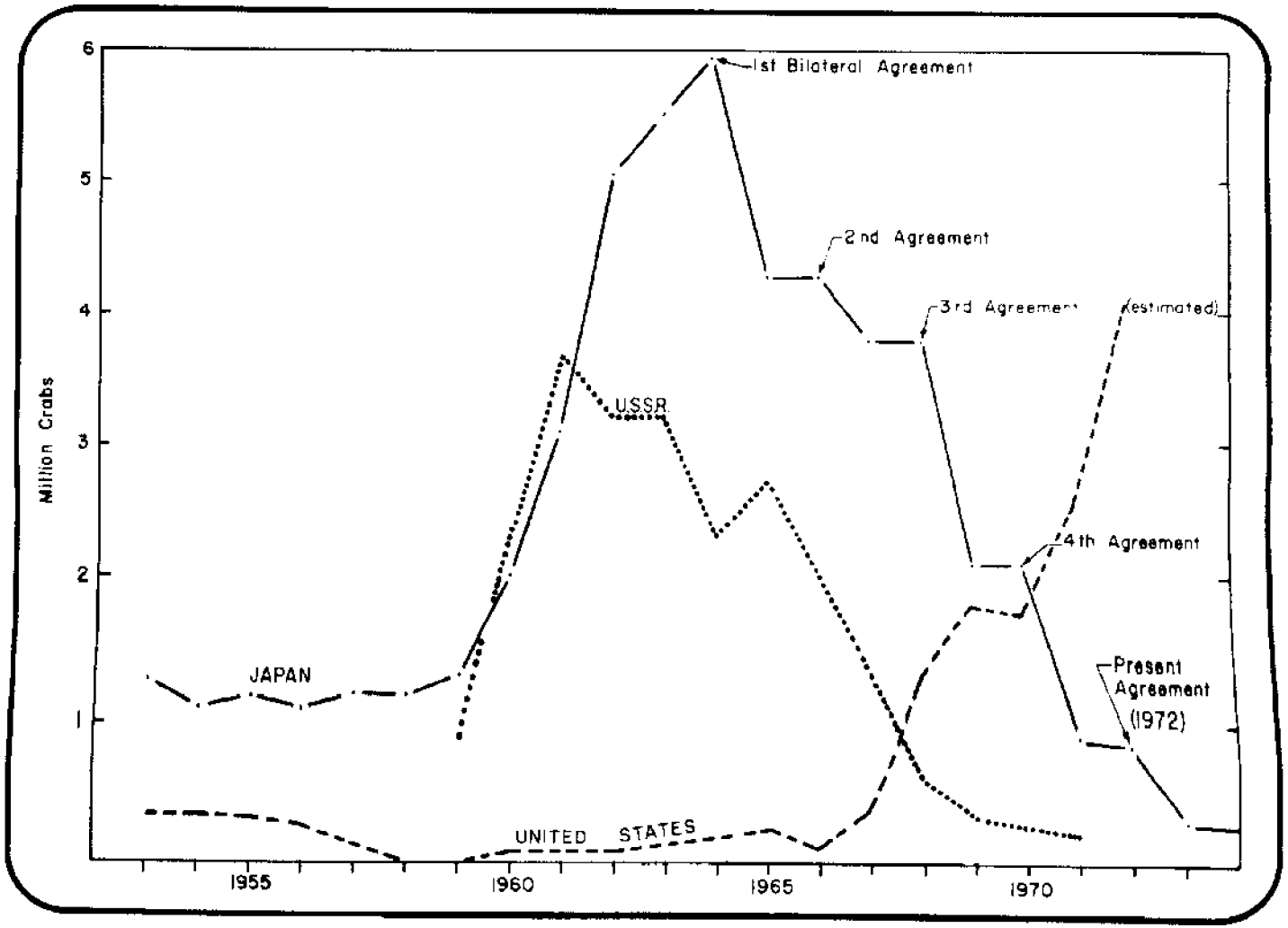


Figure 8 Eastern Bering Sea King Crab Catches, 1953-1972.

Two months later, in January 1969, the Soviet Union agreed to a reduction of its catch from 100,000 to 52,000 cases, and agreed to limit expansion of the area to be fished by crab pots to match that previously agreed to by Japan in May of 1967. Additional loading zones, one in the Gulf of Alaska and two in the Bering Sea, were granted to the USSR by the United States. A quota on tanner crab was also incorporated in the treaty, with the USSR agreeing to a 40,000 case limit.

The U. S. effort in the Aleutians and the eastern Bering stabilized somewhat in the 1969 and 1970 seasons. A quota system was imposed in the Aleutians by the Alaska Board of Fish and Game beginning with the 1970 season. The American effort was also marked by the tendency of the new king crab boats to fish several different areas. The new boats can store up to 100,000 pounds of king crab for two to four weeks, which enables them to fish the Bering Sea and the western Aleutians from bases as far away as Kodiak.

Despite the reduction in total catch from a three nation high of 8,818,000 king crabs in 1964 to 4,083,000 in 1970, the catch per unit effort and the average size of king crabs continued to decline, manifesting a need for more effective conservation measures.[47] During negotiations in the fall of 1970, the Japanese king crab quota was again reduced over 50 percent to 37,500 cases, and the tanner crab quota for Japan was established at 14.6 million crabs. The following February, the Soviet king crab quota was reduced to 23,000 cases (about one-fifth of the original Russian quota established by the first agreement in 1965). Tanner crab quotas were also reduced to 35,000 cases for the USSR.

In 1970, the Soviet Union had packed only 12,800 cases of king crab, less than 25 percent of its 52,000 case quota for that year, while packing 38,000 cases of tanner crab, 95 percent of its quota for that species. The USSR stated that it would not exceed the 12,800 case total of king crab for the 1971 and 1972 seasons.

The U. S. fleet nearly doubled its efforts in the Bering Sea in 1972, achieving a record catch of 21.8 million pounds of king crab, as compared to the previous high of 12.9 million pounds in 1971. Their 1972 harvest amounted to 78 percent of the total reported king crab catch in the eastern Bering. The Soviet Union did not fish in 1972. In 1964, when the fishery peaked, the U. S. share of the catch had been only 1.5 percent of the total. The results of four bilateral negotiations had clearly established U. S. ascendancy in the king crab fishery.

In November of 1972, Japan virtually abdicated any substantive rights to the eastern Bering fishery when it accepted a quota of 270,000 king crabs in the southern area and 430,000 in the northern area. (See Figure 9.) This was a reduction of about 73 percent from the one million crabs fished in the southern area in 1971 and 1972.

The Soviet Union in February of 1973 accepted a quota of 100,000 king crab and 1.8 million tanner crab in the southern area and 160,000 king crab and 2.4 million tanner in the northern area. Thus, while the USSR maintained its interest in these fisheries, the low quotas make the operation of a distant-water fishery unprofitable except when crab may be taken in conjuction with other species.

The Japanese quota for tanner crab in the southern area was reduced from 14.6 million crabs to six million, and in the northern area a new quota of eight million tanners was established. Thus, Japan accepted regulation in a new area as well as further reductions in catch quotas.

Five rounds of bilateral negotiations with Japan and the Soviet Union in regard to king crab and tanner crab resources of the continental shelf of the eastern Bering Sea and the Gulf of Alaska have resulted in de facto recognition that America has the exclusive exploitation rights to these resources. It is apparent that a continued U. S. effort in the fisheries will eventually eliminate all but token foreign quotas. Enforcement of the quotas is another matter.

47. International North Pacific Fisheries Commission. *Statistical Yearbooks*, 1958-1970.

(National Marine Fisheries Service, Juneau, Alaska)

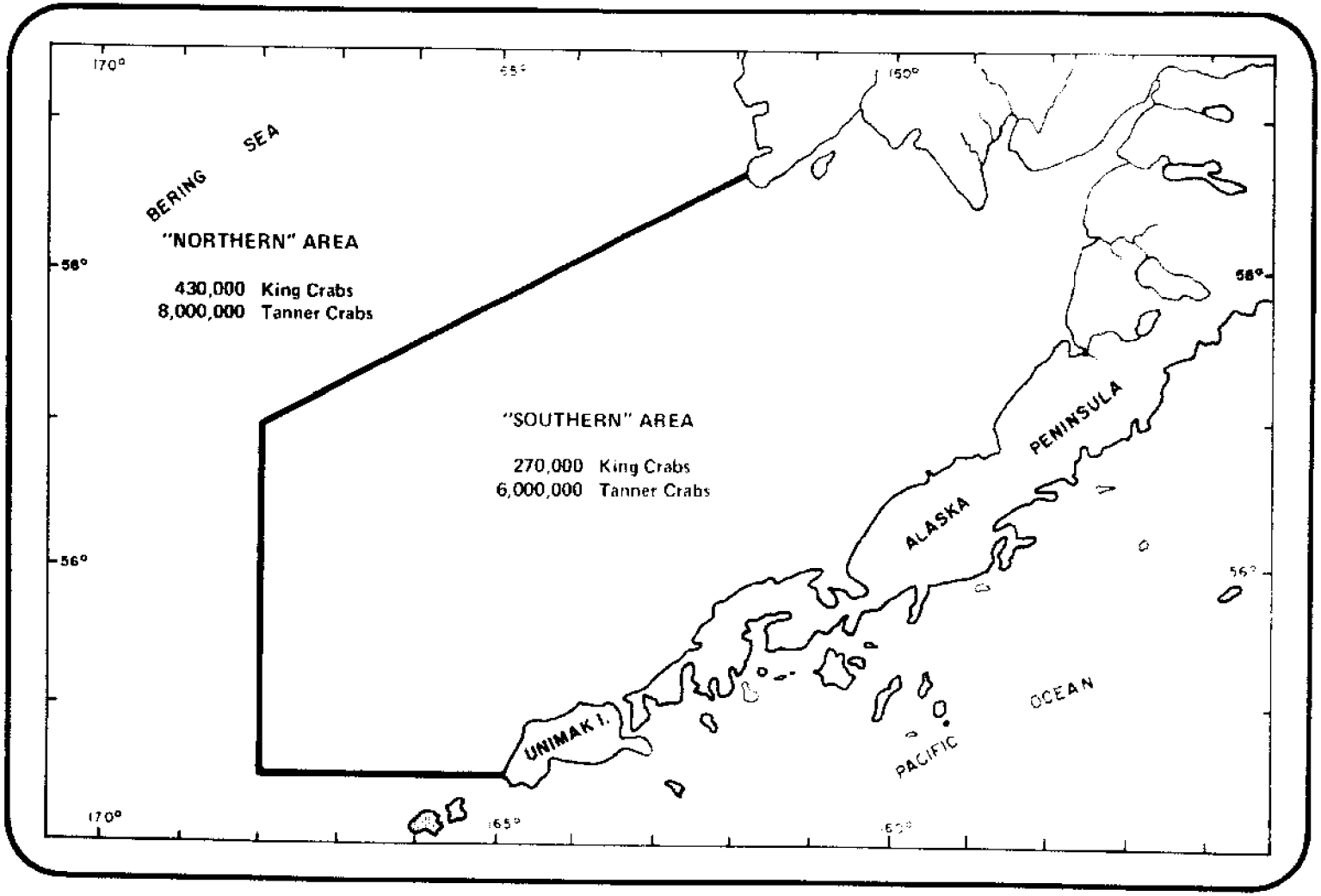


Figure 9 Japan-Eastern Bering Sea crab quotas for 1973 and 1974, established by U. S.-Japan crab agreement December 1972

The Observer Program, which was greatly strengthened in the 1972 negotiations with Japan, may provide the necessary tool for enforcement. This program allows American observers to monitor the enforcement of the treaty arrangements while stationed on Japanese vessels. In the past, the program has been largely ineffective due to restrictions placed upon the observers, but the new conditions may make it possible to accurately assess the Japanese effort.

On the positive side, the bilateral negotiations have accomplished the following: (1) The rights of the coastal state to management of creatures of the continental shelf, as outlined in the Convention, are firmly recognized in the North Pacific areas; (2) species management can be effective in reducing total effort in an international fishery. Regional agreements can be institutionalized on a recurring basis and provide for effective stock management.

Points on the negative side are: (1) Management of a single species may not prove effective where management of other species in the marine environment is not present; the future status of the king crab stocks of the eastern Bering is not insured until we know more about the effect of heavy fishing of other species in this area; (2) a stock will be seriously depleted before effective control measures can be instituted if the coastal state does not have the capacity or the will to provide a constant monitoring effort to determine the need for regulation.

Japanese ship filled with crabs for delivery to the factory ship.

Contiguous Fishery Zone Agreements

The United States has formulated agreements with both Japan and the Soviet Union since 1967 to control fishing in the nine mile contiguous zone and to allow the fleets of Japan and the USSR to load and transfer cargos in the U. S. contiguous zone. These negotiations are normally conducted at the same time as the king crab agreements are undertaken.

The contiguous zone agreements stem from the passage by the U. S. Congress of the Contiguous Fishery Zone Act (80 Stat. 908), more popularly known as the "twelve-mile bill," in 1966. This bill extended American fisheries jurisdiction nine miles seaward from the outer limits of the territorial sea. It specifically did not extend jurisdiction of the separate states of the United States.

The pressure for extension of American fisheries jurisdiction began with the fur seal controversy of 1886 to 1893, when the United States attempted to extend its control throughout the Bering Sea, but was overruled in the ensuing arbitration which recognized the British challenge to such an extension of powers. (See section on the North Pacific Fur Seal Convention for details.) The issue arose again in the 1930s when Japan began its first fisheries in the Bering Sea and Bristol Bay. Bills were introduced in Congress which would have given the United States exclusive property rights to Alaskan salmon.[48] Another bill argued that the United States should have jurisdiction over the Bering Sea, because the area was a submerged appendage of the North America continent, rather than a contintal shelf.[49] Neither of these bills were expected to be passed; their purpose was to stimulate research in the matter.

The Truman Proclamation on the continental shelf and offshore fisheries, issued in 1945, called for the establishment of conservation zones for fisheries in areas contiguous to the coast of the United States. It also stated that fisheries exploited exclusively by the United States should be subject to U. S. "regulation and control," while in fisheries shared with other countries, joint regulatory regimes should be established.[50]

Similar proclamations by South American nations caused the U. S. State Department to pursue the implementation of the Truman Proclamation provisions with little or no enthusiasm. The State Department felt that American fishermen were more hindered than helped by fisheries zones which would hamper the tuna and shrimp fishermen in their efforts to exploit distant water resources to the south, and that implementation of the North Pacific Fisheries Convention in 1953 provided adquate protection for Alaskan and west coast fisheries.

The arrival of massive Russian fleets in the eastern Bering Sea and off the Atlantic Coast in 1959 and 1960 revived congressional interest in the concept of the contiguous fisheries zone. The concept had been thoroughly discussed during the U. N. Law of the Sea conventions in 1958 and 1960, but had failed of implementation as discussed earlier. The treaties on gear regulation and the king crab negotiations in 1964 and 1965 alleviated Alaskan problems, but did little for the situation in the Atlantic.

48. U. S. Congress, S. 2679, H.R. 8982, 75th Cong., 3rd sess., 1937.
49. U. S. Congress, S. 3744, 75th Cong., 3rd sess., 1938.
50. U. S. Congress, 10 *Federal Register*, 12304, 1945.

In the mid-1960s, the Soviet Fisheries Administration discovered that the hake, butterfish, and mackerel being taken by the USSR distant-water fleet were not acceptable to consumer tastes in the Soviet Union. As a result, the great Soviet fleet was dispatched into the Gulf of Alaska and further south along the coasts of Washington and Oregon in 1966 in search of ocean perch and other species.[51]

The southward advance of the Soviet fleet provided the impetus for the passage of the "twelve-mile bill," which established the legal basis for the United States to negotiate the contiguous zone agreements.

Negotiations with Japan since the original agreement in 1967 (Figure 10) have gradually revised the areas and times in which that nation is able to fish in the contiguous zone. There was little change between the original agreement of May 1967 and that of December 1968, except for the large cuts in Japanese king crab quotas. Japan secured two more loading areas and the rights to trawl and longline fish within the contiguous zone around the Pribilof Islands. Japan also agreed to cease night trawling to a limited degree in the eastern Bering in the areas where U. S. and Canadian halibut fishermen are most active. (See Figure 11.)

In the agreements of December, 1970, Japan agreed to reductions in both area and time from the areas of the contiguous zone allowed in the 1967 and 1968 agreements. In exchange, the United States granted to Japan three more loading zones within the contiguous zone. (See Figure 12.) Further restrictions and reductions were agreed to in the December 1972 negotiations; the fishing period was reduced in three areas, and one trawling area was eliminated entirely. These changes were related to the expanding U. S. crab effort in the Aleutian Islands. The provision allowing Japan to whale within the contiguous zone was deleted. (See Figure 13.)

A similar pattern has occurred during the contiguous zone negotiations with the Soviet Union. The first negotiation in February of 1967 antedated the first agreement with Japan, taking the same pattern as the king crab treaty talks. Soviet areas where fishing is permitted have been cut back in areas where U. S. crab and halibut fishermen have experienced conflict with the Russian operations. (See Figures 14 and 15.)

The general pattern of contiguous zone negotiations has been to allow fishing in the contiguous zone, to grant loading areas in exchange for gear restriction agreements in the areas beyond the contiguous zone, and to reduce the crab harvest by Japan and the USSR. Both Japan and the USSR needed the loading zones as they increased their take of demersal and pelagic species in the eastern Bering and the Gulf of Alaska.

The principle of gear restriction for a high seas fishery usually has continued. However, when U. S. fishermen have moved into an area of the contiguous zone utilized by foreign fleets, that area has usually been closed to fishing by foreign vessels.

There has been much discussion and concern about enforcement of the provisions of this and other agreements. At the last negotiations in November of 1972, the United States secured an agreement with Japan to allow an increase in observers and fewer restrictions on observer actions when they are aboard Japanese ships.

The U. S. negotiators at the end of the last meeting with Japan announced their belief "that the current agreements have significantly strengthened the U. S. position that it has a special interest in high seas resources adjacent to its coast and that improved conservation measures are needed to protect these resources for U. S. fishermen."[52] That seems to be a fair assessment, considering the results of the contiguous zone negotiations thus far.

51. *Pravda*, 8 October 1967.
52. U. S. Department of State, *Press Release 291*, 22 November 1972.

(National Marine Fisheries Service, Juneau, Alaska)

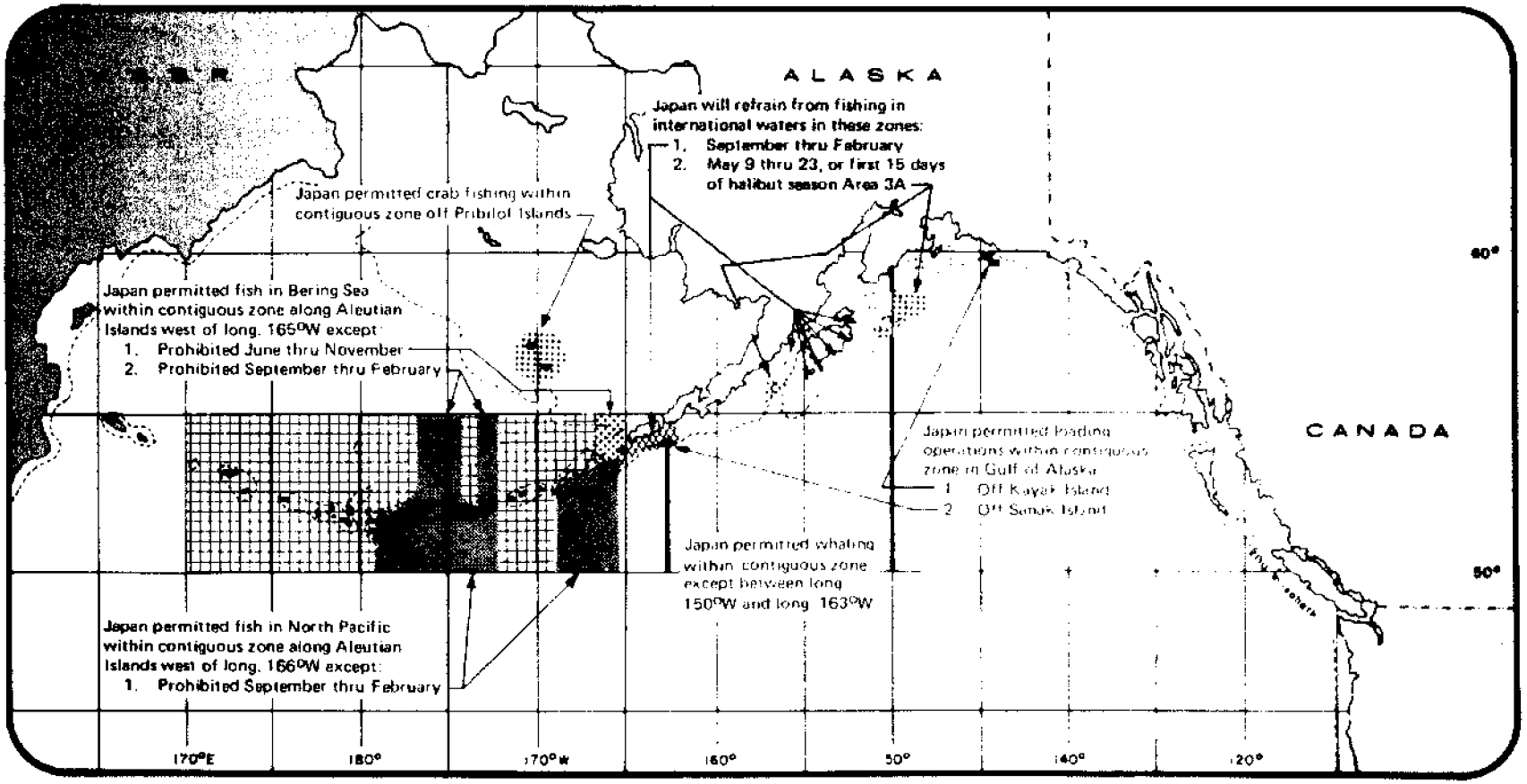


Figure 10 Fishing and loading areas established by U. S.-Japan contiguous fishery zone agreement.

(National Marine Fisheries Service, Juneau, Alaska)

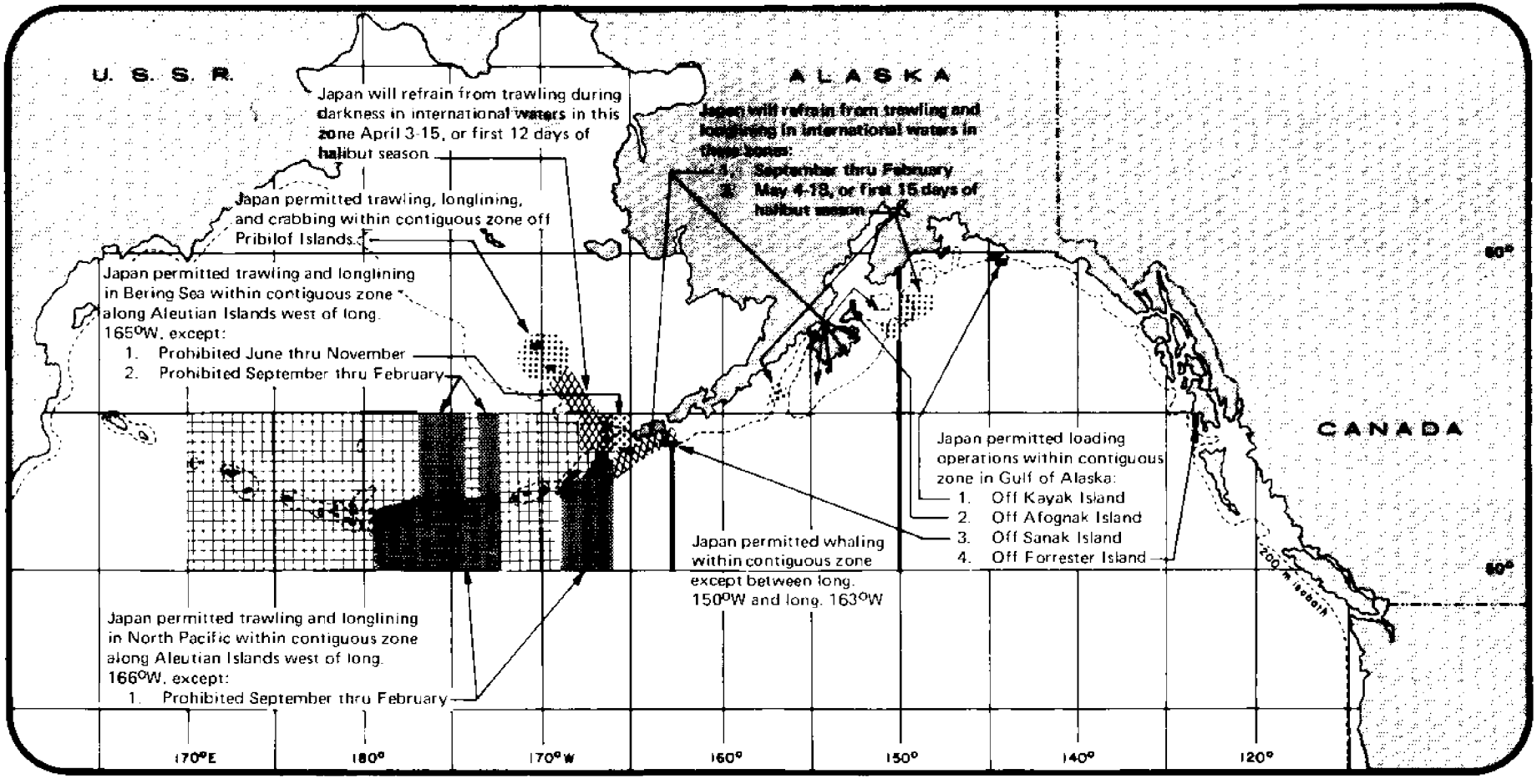


Figure 11 U. S.-Japan agreements implementing U. S. contiguous fishery zone May 1967, extended and modified December 1968.

(National Marine Fisheries Service, Juneau, Alaska)

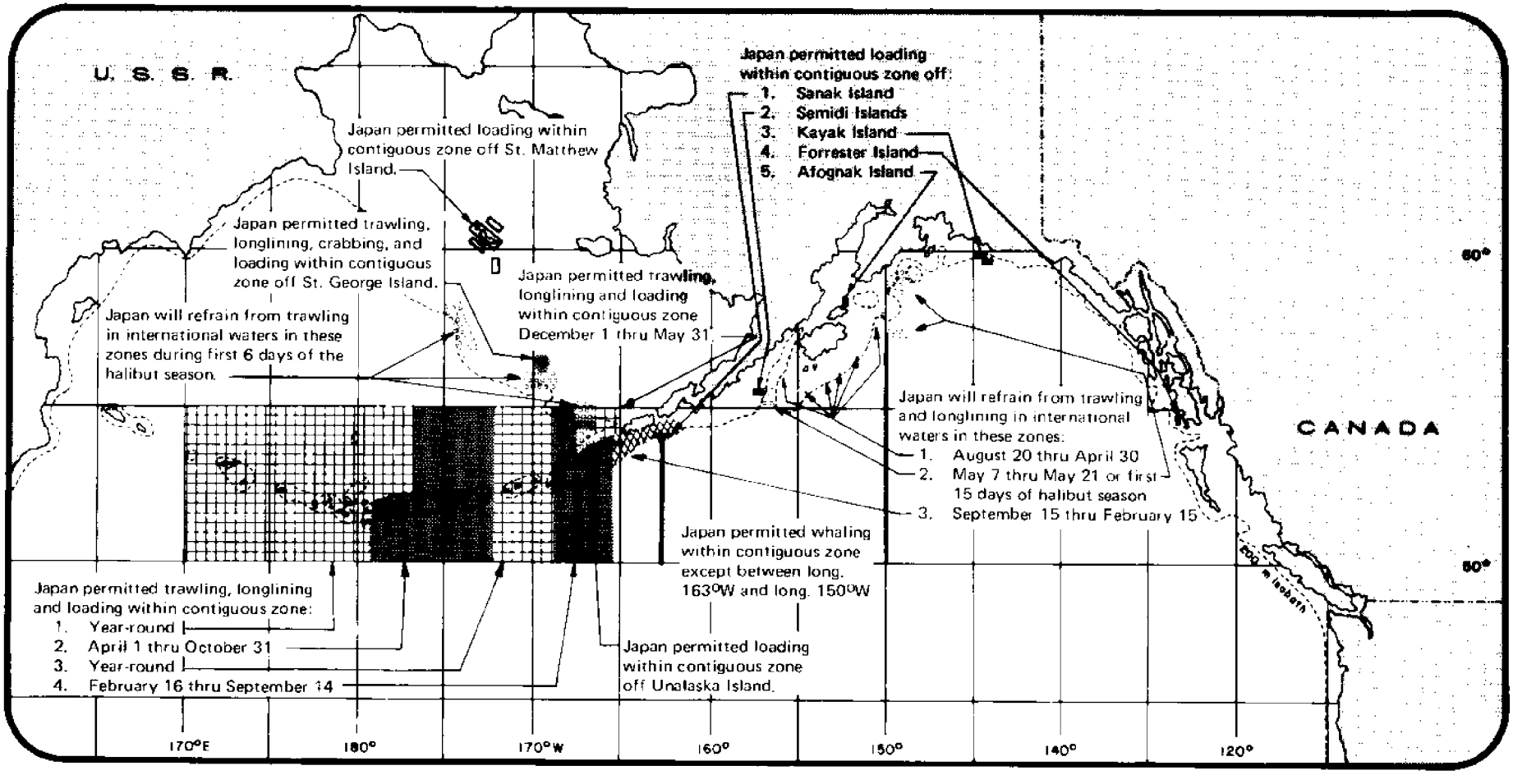


Figure 12 Fishing and loading areas off Alaska established by 1970 U. S.-Japan contiguous fishery zone agreement.

(National Marine Fisheries Service, Juneau, Alaska)

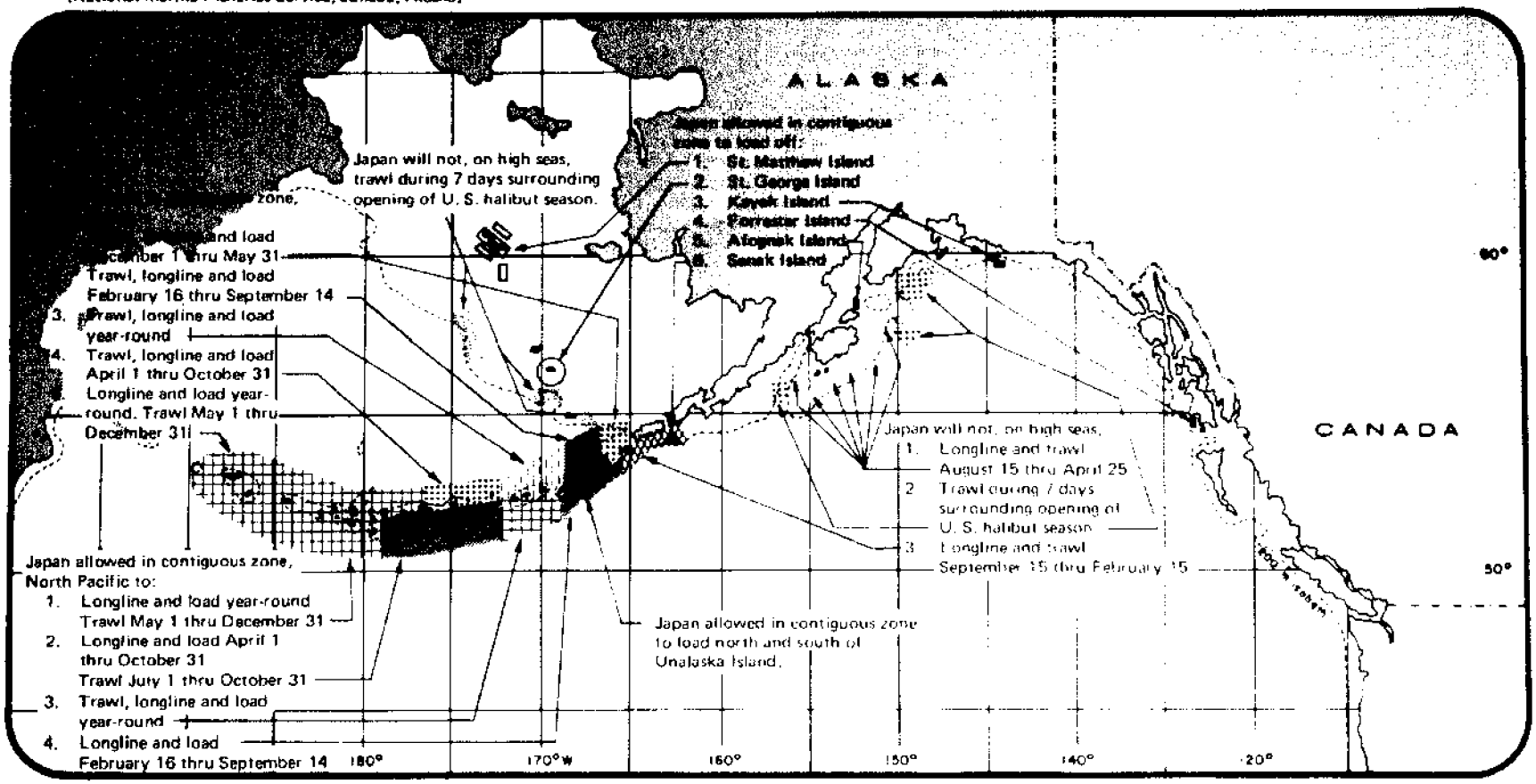


Figure 13 U. S.-Japan fisheries agreements concerning the U. S. contiguous fishery zone off Alaska December 1972.

(National Marine Fisheries Service, Juneau, Alaska)

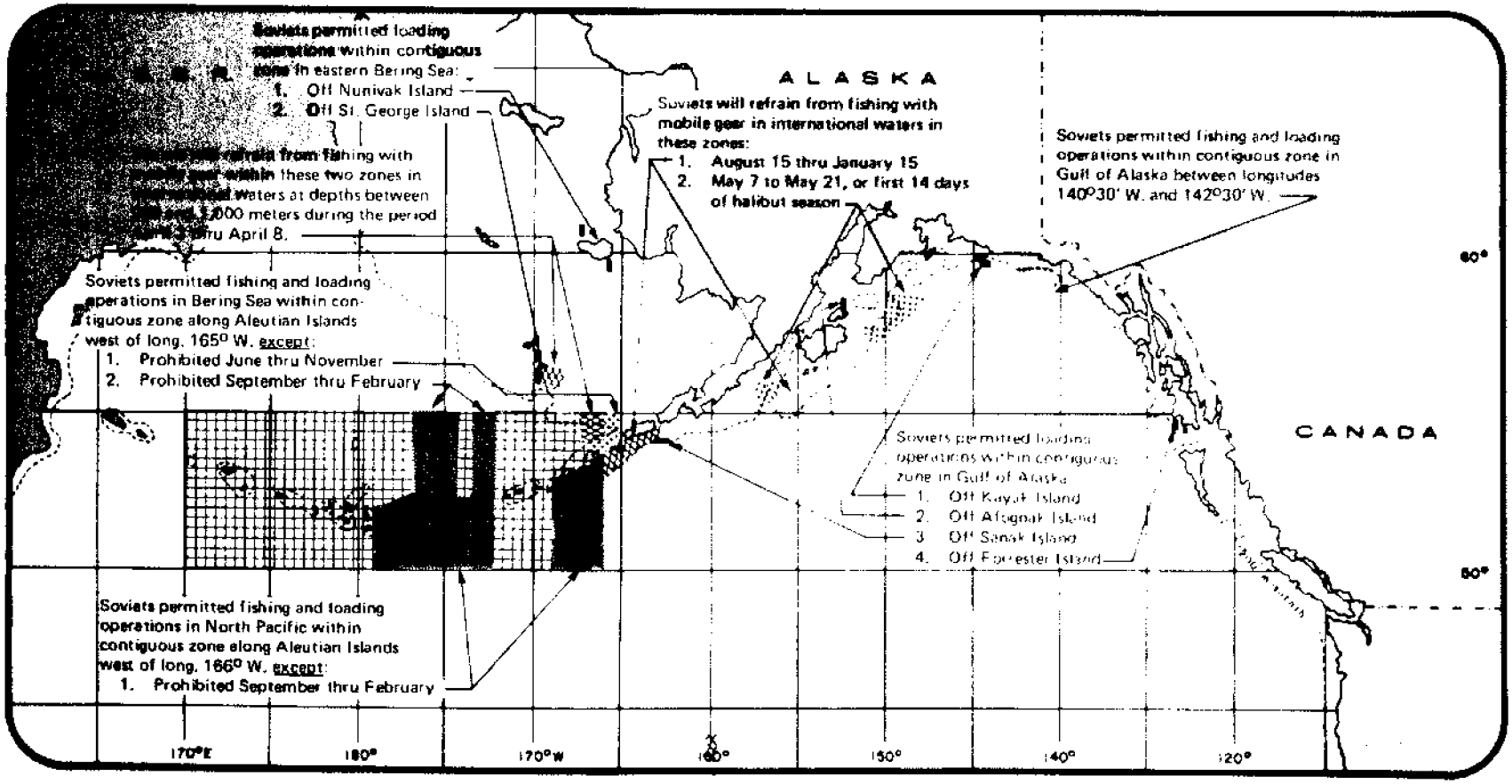


Figure 14 U. S.-U.S.S.R. fisheries agreements of December 1964 and February 1967 as extended and modified January 1969.

(National Marine Fisheries Service, Juneau, Alaska)

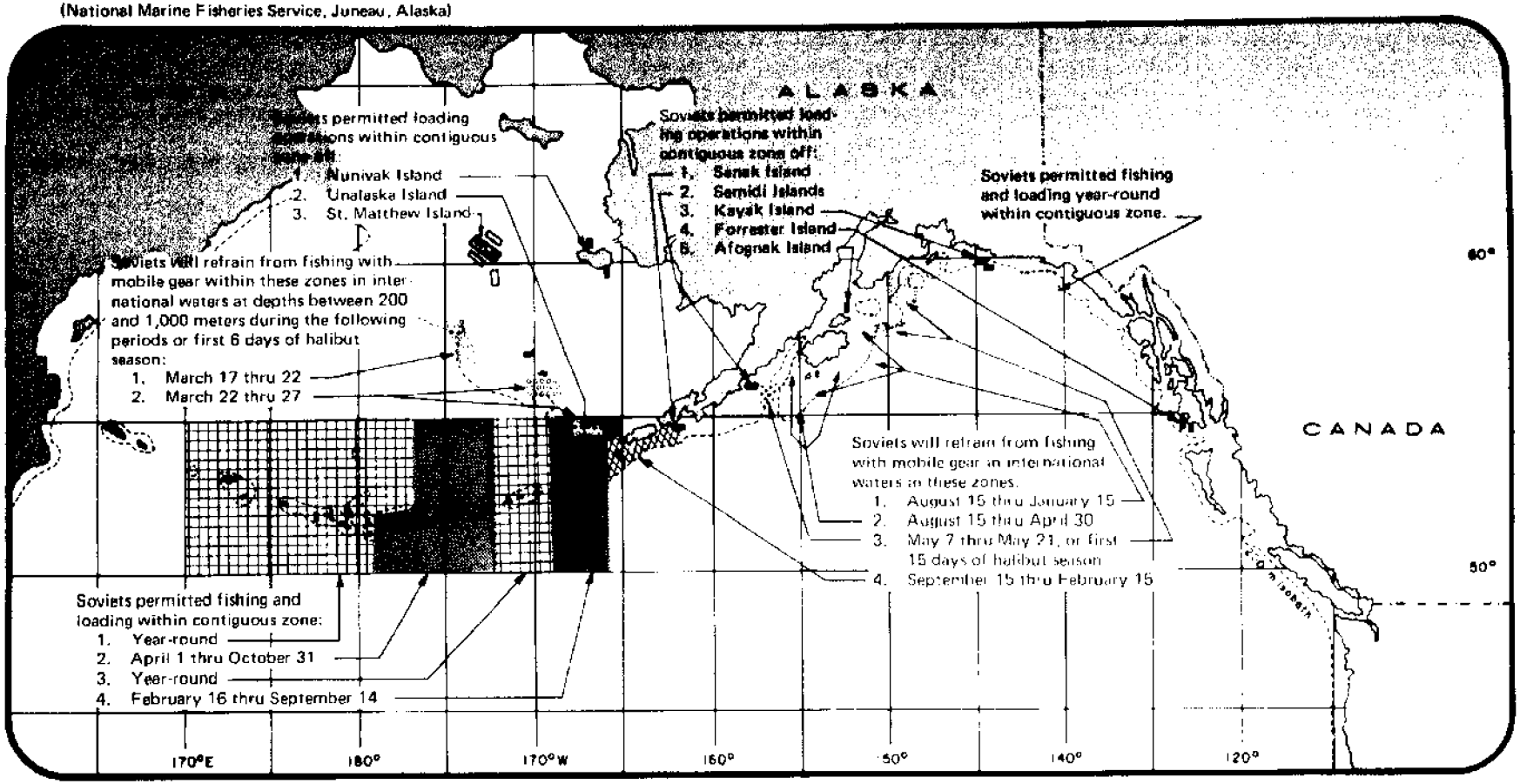


Figure 15 U. S.-U.S.S.R. fisheries agreements concerning the U. S. contiguous fisheries zone off Alaska February 1971.

U. S.-Republic of Korea Fishing Agreements

When the Republic of Korea began exploratory fishing in the North Pacific and Bering Sea in 1966, it was expected that the nation would develop a groundfish trawl fishery and a high sea salmon fishery. While Alaskans could accept the former, they were certainly not prepared to accept the latter.

The Alaskan congressional delegation actively pushed for an agreement which would prohibit Korean high seas salmon fishing efforts. In November of 1972, the United States and the Korean government finally reached accord concerning the fisheries of the Northeastern Pacific Ocean and the Bering Sea; they signed a five-year agreement including the following conditions:

> The United States agreed to provide technical advice on shellfish sanitation and salmon propagation to Korea. Three loading areas were established within the U. S. contiguous zone in the Bering Sea for Korean fishing boats to transfer their cargoes.
>
> Both nations agreed to exchange scientific and statistical data and to assist in development of joint participation ventures in commercial fisheries.
>
> Korea agreed to refrain from fishing for salmon and halibut in the Northeastern Pacific Ocean and Bering Sea east of 175° west longitude. (See Figure 16.)
>
> The two nations agreed to consult on and limit gear conflicts and to refrain from practices which would result in pollution of the seas.[53]

In the first salmon fishing season following the signing of the above agreement, Korean vessels were accused of high seas fishing for salmon as far east as 160° west longitude. However, the U. S. Coast Guard was unable to catch the vessels in a chase; no firm evidence of such fishing was established.

Thus far, only a small part of the Korean fishing effort has been conducted in the North Pacific. In 1971, seventeen of the 351 boats in the fleet fished off Alaska. They were groundfish trawlers whose catch was estimated at 7,000 metric tons.[54]

The bulk of the fleet will continue to concentrate on tuna, aiming most of its increasing efforts at the skipjack tuna populations of the midwestern Pacific. A survey of trawling and gill netting potential in the southwest Atlantic or the North Pacific is planned in 1974, according to the Korean government's five-year fishery survey program.[55]

53. U. S. Department of State, *Agreement Between the Government of the United States and the Government of the Republic of Korea Concerning Cooperation in Fisheries*, Washington, D. C., 24 November 1972.

54. Dr. Harry L. Rietz, Alaska Region Director, National Marine Fisheries Service. 18 March 1974: personal communication.

55. *Ibid.*, p. 5.

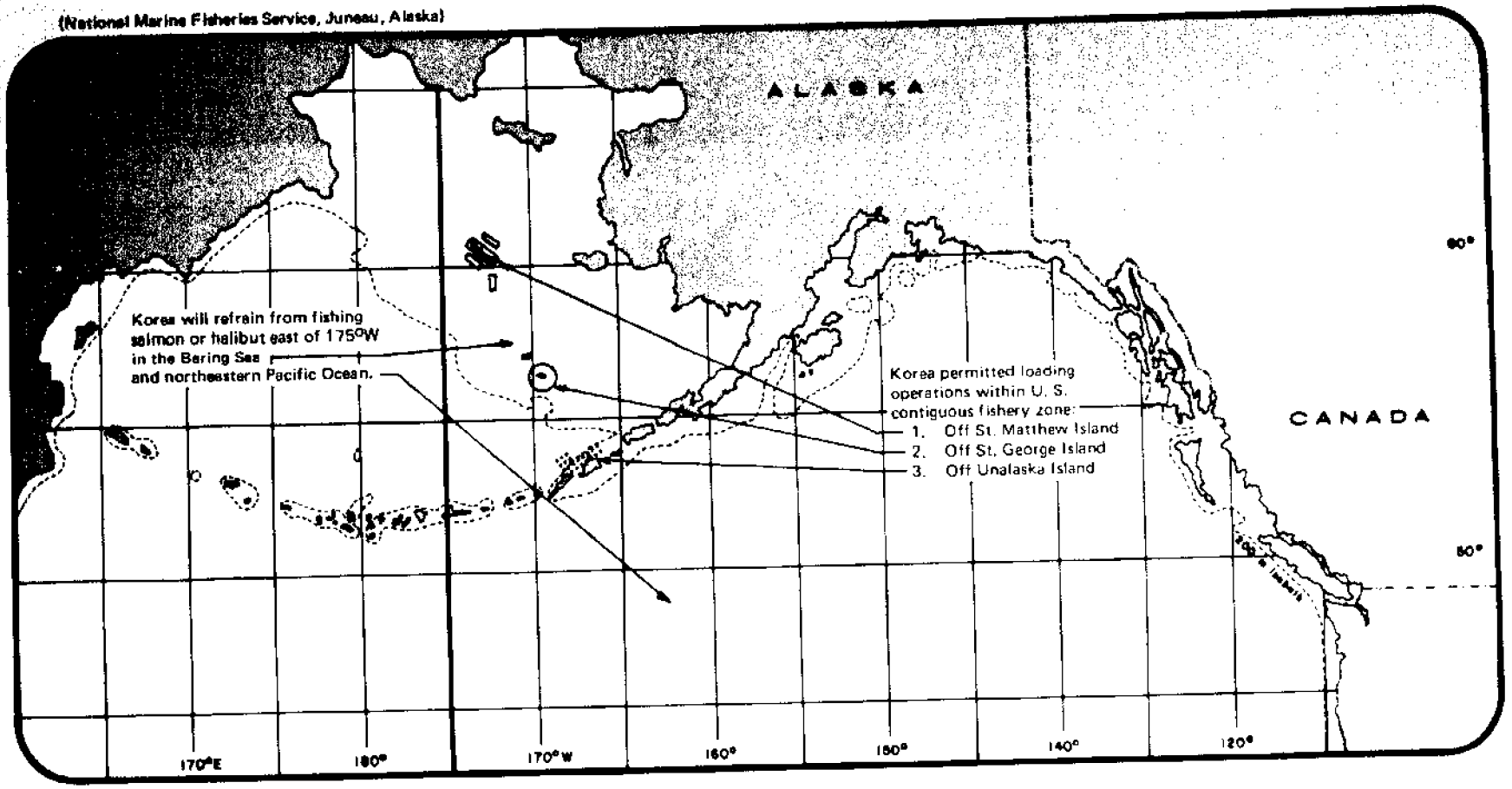
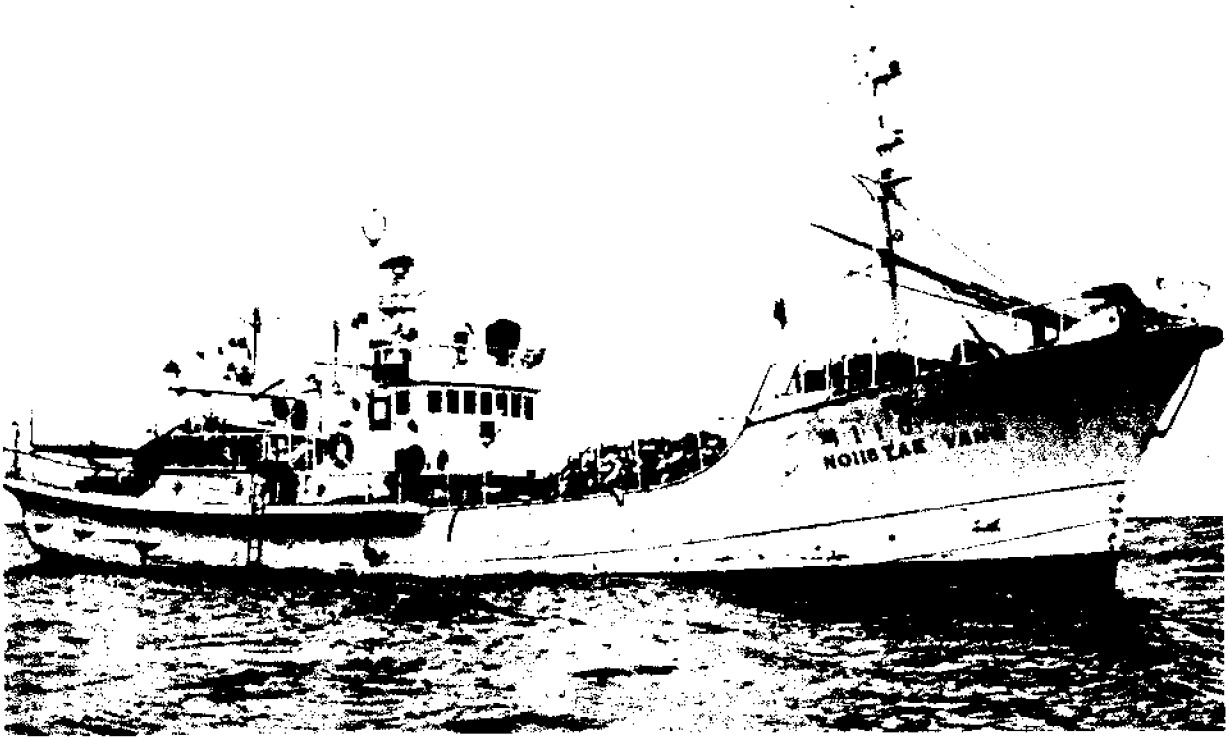


Figure 16 U. S.-Republic of Korea (South Korea) fisheries agreement November 1972.



Gill nets filled with salmon aboard a South Korean ship, the TAE YANG.

Canada-U. S. Reciprocal Fishing Agreement

The first Reciprocal Fishing Privileges between the United States and Canada were concluded on April 24, 1970. This was another step in the long history of fishing relations between the two nations dating back to special fishing provisions for U. S. citizens in the Treaty of Ghent in 1783, which certified the independence of the United States from Great Britain.

The agreement was designed to resolve problems that had been building since the establishment of exclusive fishing zones by Canada (1964) and the United States (1966). These zones encompassed several historic fisheries of both nations for species including salmon, blackcod, halibut, and tuna.

The first Reciprocal Fishing Privileges included the following conditions:

1. Salmon trolling by Canadians would be permitted in the three- to twelve-mile area of the United States only off the coast of Washington State. Salmon trolling by U. S. citizens in Canada's exclusive fisheries zone would be permitted only off the west coast of Vancouver Island.
2. Fishing for Pacific halibut would continue in each country's reciprocal fishing area.
3. Trawl fisheries that historically had been conducted in each country's reciprocal area could be continued.
4. Neither country could fish for herring in the other's reciprocal fishing area, but transfer of herring from fishing boats to tenders could continue within certain specified areas on the east coasts of both nations.
5. Fishing for any species of clam, scallop, crab, shrimp, or lobster would not be permitted in either country's reciprocal area. Neither country would initiate fisheries within the reciprocal area of the other country on species which were already fully utilized.
6. Initiation of any new fisheries for species not fully utilized by vessels of one country in the reciprocal fishing area of the other will require consultation and agreement between the two countries.
7. Fishing regulations in the reciprocal zone would apply equally to fishermen of both nations.
8. The two nations also agreed to consult within one year regarding all matters of mutual concern related to the fisheries for Pacific salmon.[56]

The only changes of consequence from the previous informal agreements with Canada were the elimination of Canadian fishing for shrimp and herring off the east coast of the United States and the limitations imposed on salmon trolling off the west coast of the United States and Canada.

In an effort to reach accord on the Fraser River salmon fishery historically shared by the United States and Canada, representatives of the two nations met for a week in May 1973. However, no agreement was reached at that session, during which Donald L. McKernan, the former Special Assistant to the Secretary of State, outlined how the U. S. share of Fraser River sockeye salmon had declined from three-fourths

56. U. S. Department of State, *Agreement Between the Government of the United States of America and the Government of Canada on Reciprocal Fishing Privileges in Certain Areas Off Their Coasts.*

of the total catch to 42 percent of the sockeye catch while the U. S. share of pink salmon catch averaged about 33 percent in recent years.

McKernan also described the investments that the United States had made to maintain the Fraser River salmon run, but he recognized Canada's right to conduct programs to enhance the runs and manage the stocks in the river system. He reiterated two proposals which the United States had made to stabilize the Fraser River run and to maintain some interests of United States fishermen.[57]

In reply, the Canadians refuted all U. S. claims to the Fraser River fishery and concluded that U. S. investments in maintenance of the run had long since been amortized.[58]

Representatives of the two nations resumed their meeting late in May in Ottawa and were able to sign a new agreement on June 15, 1973 extending the Reciprocal Fishing Agreement for one year with the following modifications:

1. Canadian salmon fishing in the U. S. contiguous fishery zone south of Carroll Island at 48° 3'' north latitude off the coast of Washington State was prohibited.
2. U. S. salmon fishing effort in the contiguous zone off most of Vancouver Island was eliminated. Sport fishing by U. S. nationals is not affected if they comply with Canadian regulations.
3. Consultations to regulate fisheries in the Straits of Juan de Fuca and Northern Puget Sound are to be held as necessary.
4. U. S. fishing days for king (chinook) salmon and dog (chum) salmon near Point Roberts are to be coordinated with Canadian seasons for the lower Fraser River.
5. Limited blackcod fishing is permitted for each country in the Pacific reciprocal areas.
6. A limited tuna catch by Canada is permitted off the U. S. Atlantic coast in the reciprocal area.
7. Large U. S. trawlers are not permitted where comparable Canadian trawlers are prohibited off the Atlantic coast of Canada.[59]

The essence of the Reciprocal Fishing Privileges is recognition by both nations that the state which owns the spawning river system has a primary right to anadromous fish stocks from those rivers. Historic fishing rights suffered a considerable loss of stature in this agreement, as compared to previous fisheries agreements between these two countries and to other multinational agreements.

The Canadian position is that each country should harvest the salmon originating in its own rivers and interceptions should be reduced as much as possible.[60]

In regard to such rivers systems as the Stikine, the Alsek, and the Yukon, substantial parts of which lie in Canada, there can be little doubt that the State of Alaska and the other U. S. states have made contributions to salmon runs in research effort and historically have made commercial use of the runs. Any Canadian claims to these salmon runs, based solely on the fact that the spawning grounds are in Canadian territory, would open an entire new question of fisheries allocation. There would seem to be little in the history of the agreements on salmon runs of the Fraser and Columbia rivers that would justify unilateral Canadian claims to substantial increases in quotas as long as the run is properly managed for escapement in waters which are controlled by the State of Alaska.

57. U. S. National Oceanic and Atmospheric Administration, *NOAA Press Release*, Seattle, Wash., 8 May 1973.
58. *Ibid.*
59. U. S. National Oceanic and Atmospheric Administration NOAA Press Release 73-144, Washington, D. C., 3 July 1973.
60. *Ibid.*

Alaska's Needs in International Fisheries Control

As was stated in the introduction, Alaska must fit its fisheries policies within the larger policy of the United States. It has been demonstrated by the review of existing treaties that the application of the larger U. S. policy has been uneven at best. The review has also shown that Alaska fits the classic position of the coastal state which must protect its fisheries from the distant-water fleets of other nations to the best of its ability.

Alaska's living resources of the sea can provide an economic base for the state that will last as long as the seas and coastal zone are maintained in a condition favorable to the reproduction of stocks. Improvements in marketing, together with the program to limit entry to the Alaskan fishing fleets that has been undertaken by the state government, will enable the fishing industry to provide income for the state's rural population on a regular and continuing basis. The current income of Alaskan fishermen is a small fragment of the potential income from an industry that is properly managed and protected from overwhelming foreign incursions.

The resources of the eastern Bering and the Gulf of Alaska have an annual retail market value of from $700 million to $1 billion. The U. S. fisherman currently is taking only some $400 million, of which probably only $40 million is returned to Alaska fishermen and processors.[61] The above estimate includes only those species presently sought by U. S. and foreign fishermen and puts a minimum value on the great pollock catches made by Japan and the USSR in these waters.

In furthering the development of an Alaskan position, general principles on international fisheries expressed by McKernan can be applied to the present situation in the North Pacific fisheries. McKernan's principles are:

1. Adequate national and international organizations, primarily regional in nature, must be formed to conserve resources and to provide a high sustained yield. Such organizations must be available to all nations, providing expertise to the developing as well as the developed states.
2. There must be a better balance between the rights of the coastal state and those of the distant-water fishing state. That is, preferential rights must be given to the coastal states over fishery resources lying off their coasts and associated with coastal waters.
3. Where disputes over fisheries arise between nations, there must be adequate means to resolve these conflicts in a timely manner, while protecting the rights of both parties.
4. A stable world fishery regime, while taking into account the interests of the coastal states located near productive fishing grounds and the distant-water states with their large and efficient fishing fleets, must also consider the worldwide interests of mankind in the food resources of the oceans, including landlocked and shelflocked states and those states with narrow access to a sea which may not be productive adjacent to their coasts.
5. Effective guidelines must be developed for the ultimate allocation of the resources among the nations of the world.
6. An international regime must be established to ensure accurate registration of the amount and changes in fishing effort, to compile adequate catch records, and to provide some overview of the activities of all nations which wish to exploit living resources.

61. David Heernsteen. Testimony before the Alaska State Legislature, Natural Resources Committee, February 1973, and Personal Correspondence.

7. International standards must be applied to prevent the waste of renewable resources and provide adequate opportunity for the full development and use of all fishery resources. A nation must not be allowed to prevent the use of fishery resources simply because they lie off its coast.

8. A combination of national and international enforcement of accepted rules must be provided to prevent unfair treatment of any nation's fishermen and to ensure that all fishermen operate according to accepted norms.[62]

Within these broad ranging principles, a U. S. position which suits the needs of Alaska and its residents certainly can be developed. The key principles for Alaska are those which state that organizations should be regional in character and that coastal states should possess preferential rights over fisheries resources lying off their coasts.

The interests of the coastal state in fisheries carry with them the responsibility for environmental and ecological management in its coastal zone. Nations will be called upon to expend large sums for pollution control to limit overall pollution of the marine environment. It is not likely that a coastal state will pursue these programs with enthusiasm, if one of the net results is to enhance the productivity of resources which are largely harvested by distant-water fishing fleets, with little or no compensation to the coastal state.

A case in point is the failure of nations which border the Mediterranean to jointly invest only $80 million dollars in ballast treatment facilities for oil tankers, a venture which would have prevented the discharge of some 300,000 tons of oil into that sea during the last decade.[63]

While some nations provided ballast treatment facilities at some of their tanker terminals, no progress was made toward a comprehensive program until the pollution level had reached dangerous proportions; even now progress is grudging and slow. Pollution from domestic sewage is more serous in that it occurs in many more places and will be even more difficult to effectively regulate. If the nations which still have viable fisheries in the Mediterranean were given some assurance that their nationals would have priority in fishing the stocks off their coasts, these nations would certainly be able to visualize a more direct relationship between expenditure and value received, and would be more inclined to promote pollution control measures within their own countries.

In Alaska, a delicate balance already exists between those with a primary interest in the living resources of the sea and those who wish to expand offshore exploration for petroleum and other seabed and subseabed minerals. There are large areas under state control, and even larger areas under federal control, that will eventually require regulation to minimize conflicts between renewable and nonrenewable resources development. The State of Alaska will find it much easier to justify, impose, and maintain extremely strict controls on those operating under state jurisdiction if the state is receiving an adequate private and public return from its fisheries. If such returns are not evident, it will be very difficult to persuade the state legislature to make adequate appropriations for pollution control and sub-sea mineral development regulation.

Federal agencies also will find their positions in the state easier to maintain if their regulations obviously benefit a large segment of the state's population.

62. Donald L. McKernan, "World Fisheries-World Concern," in *World Fisheries Policy*, ed. Brian J. Rothschild (Seattle: University of Washington Press, 1972).

63. United Nations, *General Fisheries Council of the Mediterranean, Review of the State of Marine Pollution in the Mediterranean Sea*, FAO, Rome, 1972.

International Administration Alternatives

Few people with experience in international fisheries believe that an organization with a world-wide base can function effectively in fisheries regulation and conservation. The International Whaling Commission is a case in point. Fishery problems are difficult to resolve between just two disputants. Organizations which include states with no direct interest in the fishery in dispute will complicate matters. However, a global agency with an overall authority to coordinate research and data collection—at least to consider overlapping areas between regions and to identify gaps in regional research programs—could be useful.

This function is already served to some degree by the Food and Agriculture Organization (FAO) of the United Nations. Expansion of that agency's role would probably meet the needs for minimal coordination between regions for the foreseeable future.[64]

Several alternatives have been offered in the past decade for regional fisheries organizations in the North Pacific. Some of these proposals take in the entire North Pacific and others restrict their coverage to smaller areas. Most attempt to take in—at a minimum—the fisheries in which the proposing nation is vitally concerned.

Hiroshi Kashara of the FAO has suggested that there are only nine nations (Table 6) that could conceivably have an interest in fishing in the entire North Pacific in the near future.[65] If all of these nations were signatories to a regional pact that outlined areas of responsibility for each, such a pact could serve as a framework for problem resolution for the immediate and near future.

Table 6
Nine Countries Bordering the North Pacific and Their Membership Status in the United Nations Conventions Governing the Law of the Sea as of August 1972

Nation	Territorial Sea & Contiguous Zone	High Seas	Continental Shelf	Fishing and Conservation
Canada			X	X
China				
Japan	X	X		
Mexico	X	X	X	X
North Korea				
South Korea				
Taiwan			X	
United States	X	X	X	X
USSR	X	X	X	

64. Hiroshi Kasahara, "International Fishery Disputes," in *World Fisheries Policy*, ed. Brian J. Rothschild (Seattle: University of Washington Press, 1972) p. 28.
65. *Ibid.*, p. 23.

Table 7
Fishery Interests North of 40° N in the Pacific

Nation	Bordering State	Fishery Entrant	Research Conducted	International Treaty at Present
Canada	X	X	X	X
Japan	X	X	X	X
South Korea		X	X	X
U. S.	X	X	X	X
USSR	X	X	X	X

To meet the needs of Alaska for the immediate future, an organization which included the four major powers presently fishing the Pacific north of 40° North latitude Canada, Japan, the United States, and USSR—plus the only other current entry in Alaskan fisheries, South Korea, would be sufficient and could operate within any larger regional pact which might be developed later.

Such a grouping would bring together all present interests in the marine systems of the Gulf of Alaska and the Bering Sea. It would isolate the problems of that area from the tuna controversies in which the United States, Mexico, and Japan become involved in the Central Pacific. It would eliminate the problems between Japan, China, and Taiwan in the China Sea, and those between Japan, North and South Korea, and the USSR in the Sea of Japan and the Sea of Okhotsk. While there are some interrelationships between fish stocks in these areas and the stocks of the Bering Sea and the Gulf of Alaska, these could be accommodated by member nations of regional organizations set up to handle matters in the areas referred to above.

The four parameters that should be considered in establishing a regional organization covering fisheries are whether a nation (1) is a bordering coastal state, (2) is an established entrant to the fisheries of the region; (3) has a viable research program under way on the fisheries of the area which contributes to rational management, and (4) is presently a signatory to international pacts for that particular area. As shown in Table 8, four nations qualify under all four parameters, while South Korea meets three.

The degree to which each nation is involved in the above four areas must next be measured. In this case, the degree of involvement by four of the states clearly necessitates their membership in any regional pact, while the case of South Korea is not so clear.

The reasons why bordering coastal states must be involved in such regional pacts have already been described at length in regard to ecological and environmental controls. The matter of economic equity rests upon somewhat hazier principles, and is a two-edged sword which can be equally used to justify the position of the distant-water fishery that is utilizing a resource not being harvested by the coastal state. However, this distant-water fishery position can only be substantiated when such fisheries are clearly making an effort to conserve stocks, and are not engaging in practices which will endanger the future of the species involved.

The degree of present involvement in a fishery admittedly is one qualification for future involvement, as nations develop an economic dependence upon their fisheries that cannot be immediately terminated, in most cases. The difficulty of terminating an established entrant to a fishery is the most compelling reason for haste in establishing a North Pacific pact that would serve in some degree to limit new entries.

It is important that utilization of the product be considered in determining which nation is a qualified entrant. Whether a nation is fishing a stock to satisfy its own protein needs or to meet its needs for foreign exchange are factors that should be considered. While both of these needs are important and a nation may fish for high value stocks for export, using the income gained to purchase cheaper food for its own population, the use of the product can be significant in determining future allocations.

A strong, continuing research program directed toward maintaining healthy fisheries has

been considered by the United States as one of the vital determinants in a nation's right to continued entry to a fishing area. The value of coordinated research cannot be overstated, and a five-nation pact in the North Pacific would hopefully make possible an open information exchange between the major research establishments—The Fisheries Research Board of Canada, the U. S. National Marine Fisheries Service, the Far Eastern Fishing Administration of the USSR, the Japan Fisheries Agency, the Alaska Department of Fish and Game, the Pacific Halibut Commission, and the Pacific Salmon Commission.

Coupled with the efforts of the marine science and fisheries departments within universities of the member nations and the efforts of private industry, it would be possible to direct research to the most necessary areas through a regional organization with independent funding capacity. However, establishing research priorities would be a continuing problem in such an organization.

Once again, the vital role of the coastal state becomes apparent. Those nations which are concerned about their coastal zones are establishing strong research and regulatory mechanisms to monitor and mitigate the impact of various industrial and other uses. If other research efforts are under way offshore and there is not a constant interchange between the two, an obvious lack of benefits results.

There are two ways in which such coordination of efforts can be achieved. The regional organization can serve a data flow and coordinative function, such as INPFC does to some degree. The problems with this system have been verifying data and insuring that required reports are made. The other method is to give the responsibility for research to the adjacent coastal state and to provide funds for such research from all entrants to the fishery, prorated against the value of their take.

This alternative has the advantage of fixing responsibility for research squarely upon the nation most concerned with the continuing quality of that research. Its disadvantages are that the coastal state is at the mercy of the other participants for financing—a situation familiar to United Nations agencies—and that it restricts research to the capabilities of the coastal state.

In the North Pacific, neither of the above conditions constitutes an overriding disadvantage. The four coastal states are large and powerful enough to insure that any financial commitments are met by those distant-water states participating in the fishery. Essentially, the situation is: No pay—no fish. All four have large scientific establishments, so staffing would not be a problem. Also, a rather free flow of exchange of scientists already exists, with the possible exception of the Soviet Union. An interchange of scientists is beginning with the USSR, and would probably be increased by treaty arrangements incorporating that country.

The scope of a regional authority for the North Pacific, both in geographical and jurisdictional extant, will be the primary subject of any negotiations. As stated earlier, the interests of Alaska would be served if the major marine ecosystems of the Gulf of Alaska and the Bering Sea were protected. However, jurisdiction would have to be extended to protect those resources presently exploited by Japan and the USSR off the coasts of British Columbia, Washington, Oregon, and California to protect the U. S. and Canadian interest in those fisheries.

An extension westward into the Seas of Okhotsk and Japan and into the waters off the east coast of Hokkaido would not be necessary at this time, since there is no North American fishing effort in those waters. However, both Canada and the United States should consider whether they wish to abrogate any future rights to fishing in Asian waters by not taking part in a regional agreement covering such waters. This suggestion may seem so remote from the present situation that it would appear at this time to be an unnecessary complication, but who would have expected in 1950 that U. S. crab fishermen would be fishing as far west as they are today? The present crab grounds of the central Aleutians are closer to Kamchatka than they are to Kodiak.

Douglas M. Johnson, Professor of Law, University of Washington, proposed an area reaching from Bering Straits to 30° north latitude and from the North American coast to the Sea of Japan in 1967. He was concerned whether even this vast area was large enough to constitute a conservation region. The southern boundary was set to coincide with the area which was closed to pelagic sealing under the 1911 Convention.[66]

66. Douglas M. Johnston, "New Uses of International Law in the North Pacific," *Washington Law Review*, 43(1):77-114.

Kasahara's proposed North Pacific, nine-nation region would closely approximate the area proposed by Johnson, except that Kasahara would incorporate Taiwan and China as participants.

It appears that such a large area would present many of the same problems facing international organizations, unless some provision were made for smaller subregions within which agreements can be reached on such matters as qualified entrants to a fishery and stock allocations. The International Commission for North Atlantic Fisheries (ICNAF) is encountering problems in allocating stocks, even though ICNAF has an involved formula for such allocations. The major problem is that ICNAF's allocations are not achieving necessary conservation, and with so many nations participating, it is difficult to maintain the viability of existing fisheries' rights against the constant pressures of new entrants.

While many stocks were sadly depleted before implementation of ICNAF's quota system, the decline has continued; in some areas of the Atlantic coast, the marine community has decreased to one-third of its normal population. The flounder stocks off southern New England (except for yellowtail) have been reduced by 90 percent. Conservation measures formerly in force terminated January 1, 1974, and there is a good possibility that the United States will withdraw from the agreement if improvements cannot be secured in implementation of those measures.

Among the proposals for improvement which may be made by the United States are:

1. Improvement of enforcement, including below-decks inspection.
2. Gear restrictions on bottom trawling.
3. An overall species quota, plus separate species quotas with a total allowable catch designated for each country. The United States would be allowed a quota based upon the capacity of its fishing fleet and the remainder of the catch would be allocated among other entrants to the fishery.[67]

All of the above measures would apply to areas considered to be U. S. coastal waters under existing U. S. policy, which is still based upon the three-mile territorial sea and the nine-mile contiguous zone. Obviously, if the situation is to be resolved to the advantage of the United States, a larger zone must be sought.

Fixing responsibility for conservation on the coastal state and providing it with an adequate zone of jurisdiction would serve to create subregions in the North Pacific due to the limited number of bordering coastal states. However, the entrants to the fishery would have to formally agree on the boundaries of coastal state jurisdiction to achieve the type of cooperation and regulation necessary for control of the entire marine biomass, especially in the eastern Bering Sea.

Another means of effecting subregional agreements within a larger organization is to restrict the jurisdiction of the larger body to a scientific research coordinating function, using it to synthesize broad general policies (similar to the United Nations Conventions which govern the Law of the Sea), but focusing on the policies needed to adapt the Conventions to the needs of the region.

The difficult tasks of establishing stock quotas and allocations could then be handled within the existing treaties and agreements. It would be necessary to negotiate new agreements between the coastal state and entrants in its area of juridiction in cases where agreements do not exist. For Alaska, this would mean bringing those species not now covered by bilateral agreement under a treaty arrangement. For example, the Soviet Union and Japan would be required to negotiate their catches of pollock, hake, and other species, just as king crab catches are annually negotiated.

Another way to reduce in scope the problems of a large regional area would be to establish subregions based upon marine ecosystems. This would closely parallel the present treaty jurisdictions for some species, but would also require forming some new regions. Ideally, regions would be formed to coincide with the general patterns of species migrations.

A Northeast Pacific region incorporating the Bering Sea, the Gulf of Alaska, and the Pacific Coast as far south as the salmon migrations proceed would be one possibility. Similar regions for the Northwest Pacific, the Pacific Coasts of the United States and Mexico, the Central Pacific, and the East China Sea could be developed. Based upon present fishing patterns, the entrants to each region would be as shown in Table 8.

67. *National Fisherman*, 54 (August 1973):4A.

Table 8
Present Entrants to Possible Fisheries Subregions of the North Pacific North of the Tropic of Cancer

Northeast Pacific	Northwest Pacific	Central Pacific
Canada*	Japan*	Japan
Japan	North Korea*	South Korea
South Korea	South Korea*	Taiwan
USSR	USSR*	United States
United States*		
Pacific Coast of North America		**East China Sea**
Japan		China*
Mexico*		Japan*
USSR		North Korea*
United States*		South Korea*
		Taiwan*

* Coastal State

The approach outlined above has been adopted in part by the organizations formed for management of tuna—the Inter-American Tropical Tuna Commission (IATTC) and the International Commission for the Conservation of Atlantic Tunas (ICCAT). Both of these bodies are restricted to species management of tuna, but the ICCAT has established the following four panels which concentrate upon tuna problems within specific areas: (1) Tropical tunas; (2) north temperate tunas; (3) south temperate tunas; (4) other species such as bonito. Both of these conventions are geographically based upon the range of the tuna species they attempt to protect. The IATTC convention waters are the eastern Pacific Ocean, while ICCAT covers the entire Atlantic. Thus, a system has already been developed whereby species form the basis for regional definition, and the same general format could be used as a basis for agreement in the North Pacific.

Another management system which could, in part, operate within the existing treaty framework would cover each species independently of other negotiations. In effect, this system would extend the present bilateral negotiations to cover all stocks and would be similar to the past operations of ICNAF.

The major deficiency of this arrangement is that it fails to consider the effect that harvesting one species has upon other species with which it interacts. Ideally, the entire marine ecosystem should be managed as a unit; negotiations which focus on one species, while other species are ignored or regulated in a different manner, create situations detrimental to overall management.

If the marine ecosystem is to be managed as a unit, the ultimate selection of a manager is necessary. Happily, in the North Pacific, the general arrangement of species lends itself to designating the coastal state as manager, and therein exists a viable alternative to securing agreement on the structure of a regional body.

Alternatives for the Jurisdiction of the Coastal State

The structure of any international organization governing North Pacific fisheries will certainly depend in large part upon the jurisdiction exercised over coastal and international waters by its member states. Within the regional framework, there would have to be a general consensus on the boundaries of jurisdiction, if the coastal state is to assume responsibility for research and regulation in those waters.

A summary of present claims for fishing jurisdiction among the nine coastal states bordering the North Pacific (Table 9) shows that six nations claim jurisdiction up to twelve miles; two up to three miles, and one up to 200 miles. Some nations have begun to move towards establishment of exclusive fisheries zones based upon the territorial limits of species, but relatively little has been done to further this concept since the abstention principle, which established an exclusive fishery zone for salmon for Alaskan fishermen, was included in the INPFC treaty.

A large segment of the U. S. fishing industry has maintained that this nation should extend its exclusive fisheries zone to 200 miles, while another, perhaps even larger group, has held that such action would severely inhibit U. S. distant-water fisheries without adequately protecting domestic stocks.

R. A. Fredin of the U. S. National Marine Fisheries Service has shown that a 200-mile exclusive fisheries zone would not protect Alaskan salmon runs adequately if it were to replace the present abstention line located at 175° west longitude. Such a policy change would make more North American salmon subject to high seas fishing by making the pelagic migrations in the Gulf of Alaska available to foreign fleets.[68]

Table 9
Territorial Seas and Fishing Jurisdictions Claimed by States Bordering the North Pacific

Country	Territorial Sea	Fisheries Zone	Total	Other Regulations
Canada	12		12	Fisheries closing lines
China	12		12	Fisheries closing lines
Japan	3		3	
Mexico	12		12	
North Korea	12		12	
South Korea	3	20-200	20-200	Continental shelf
Taiwan	3		3	
USSR	12		12	
United States	3	9	12	

68. Fredin, *op. cit.*

Fredin summarized his conclusions as follows:

1. Western Alaska sockeye, and possibly western Alaska chinooks, are vulnerable to the Japanese mothership fishery over a large area west of the abstention line.

2. The abstention line provides practically 100 percent protection from Japanese high seas fishing for all North American salmon stocks other than those originating in western Alaska.

3. Asian chums extend far into the Gulf of Alaska and Asian pinks migrate as far eastward as the Alaska Peninsula.

4. Over the 15-year period from 1954 to 1968, the Japanese mothership fishery accounted for about three percent of the total catch of North American salmon.

5. The Japanese high seas fisheries accounted for 60 percent of the total catch of Asian salmon during 1954-68.

6. North American salmon and steelhead are distributed over a broad area of the Gulf of Alaska during the spring with large concentrations outside a 200-mile line.

7. Every North American stock of salmon or steelhead of significance is present outside a 200-mile line in the Gulf of Alaska.

8. The potential average annual catch of salmon by a high seas gill net fleet the size of the present Japanese mothership fleet, fishing for a 60-day period in the spring outside a 200-mile line in the Gulf of Alaska, is estimated at over 23 million fish.

9. The estimate of 23 million fish compares with an estimated average annual catch of about 2.5 million North American salmon by the Japanese mothership fishery during 1954-68 and with an average annual catch of about 75 million salmon by Canadian and U.S. fishermen during the same 15-year period.

There is little doubt that a 200-mile fisheries zone would protect Alaska's crab and shrimp resources. Most of the bottomfish of the eastern Bering and the Gulf of Alaska would also be protected, except for some stocks west of the Pribilof Islands. It is not likely that the United States would claim a 200-mile zone around the Pribilofs, since this would open the way to making the greater part of the world's oceans exclusive fisheries zones. (See Figure 17 and 18.)

In summary, a 200-mile fisheries zone would well protect most Alaskan species, but would require that a special case be made for anadromous species and would require maintenance of existing treaties on fur seals and whales.

The most valid argument advanced by the distant-water fishing nations, including the United States, is that stocks which are not being utilized to their maximum sustained yield by the coastal state should be available as a part of the commonwealth of ocean fisheries. The doctrine of exclusive coastal state control maintains that these stocks can be made available, but that the coastal state should derive some economic benefit from them.

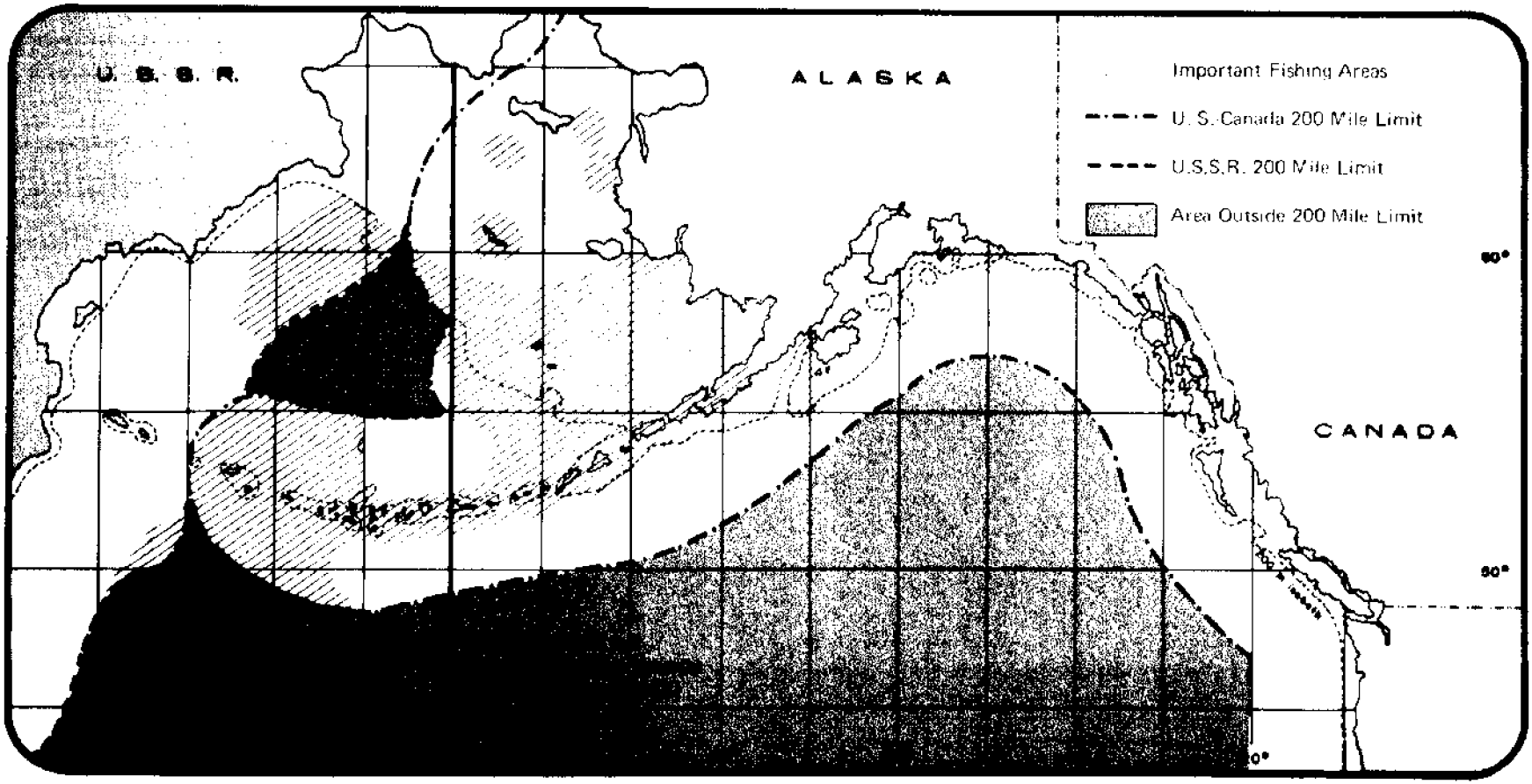


Figure 17 Relationship of present important fishing areas to the U. S.-Canada-Soviet 200 mile limit.

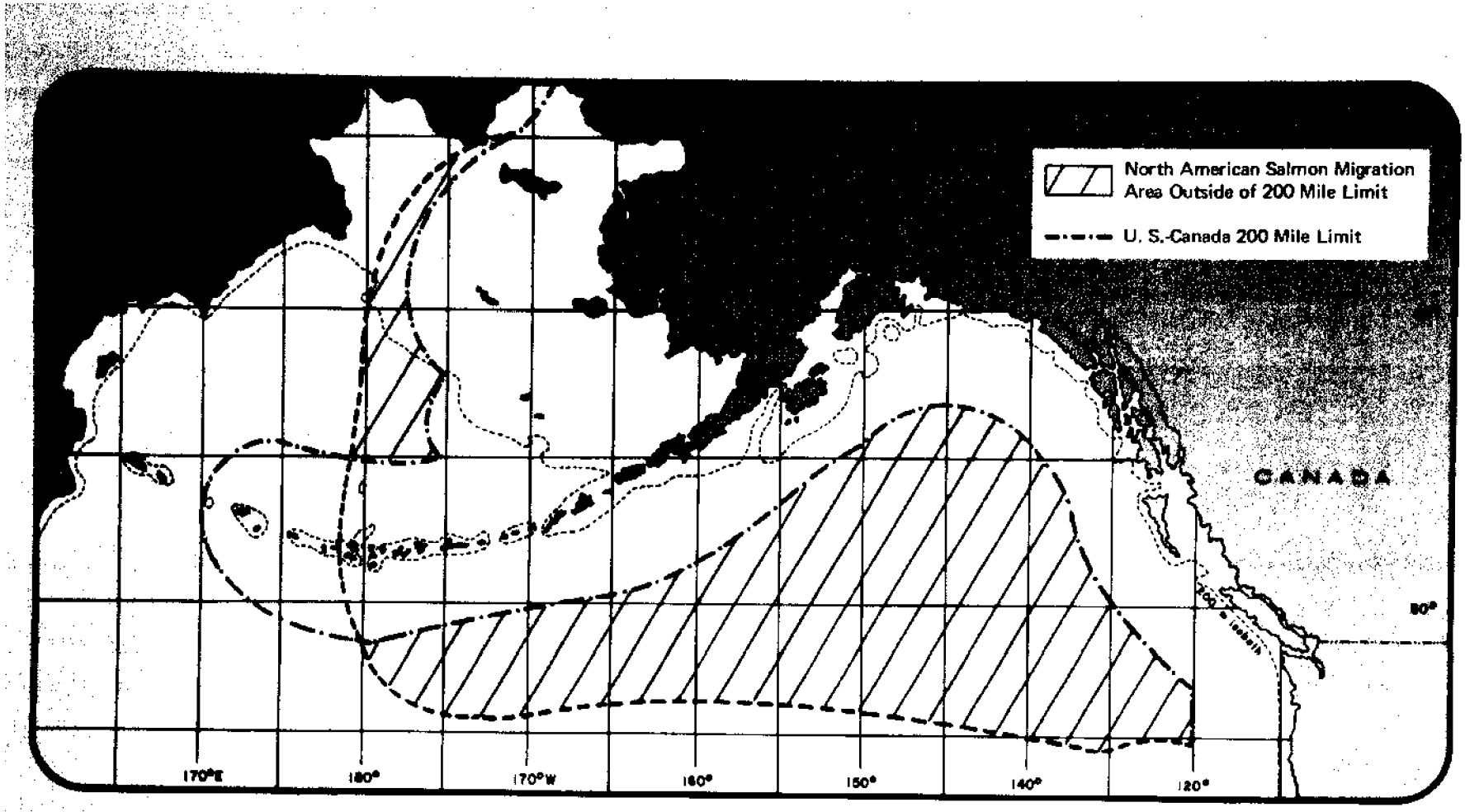


Figure 18 Relationship between 200 mile limit and North American salmon migration areas.

Certainly, if the doctrine of coastal state responsibility for stock preservation is accepted, there must be provisions for recovery of costs incurred in the regulation and research necessary for conservation measures. If this doctrine is not accepted, we must turn to an international body for control, regulation, and allocation of those species lying outside exclusive fisheries zones. In the North Pacific, such control would require the development of quota formulas similar to these developed by ICNAF, and would effectively fix the place of each entrant at its present level, if the entrant chooses to maintain its fishing activity at the same level in the future. The experience in the Atlantic has proven that there is little for U. S. fishermen to gain from such a development; it should be regarded as a last stand measure if all other efforts at stock preservation fail.

While current entrants are entitled to some allocation of a species, the rights of the coastal state to take enough of the stock to secure adequate returns, both for its efforts in research and regulation and for the local fishing economy, must have preeminence over the rights of distant-water states.

In the case of pelagic species to which no coastal state contributes more than any other for maintenance and preservation, an international regime similar to the tuna commissions may prove most effective, if membership in these conventions can be made mandatory for all entrants to a fishery. Otherwise, at this time it appears that the rights of the coastal state to secure a share of the catch should be emphasized, and that responsibility for research and regulation should be shared by states within regional bodies. The regional organizations would be responsible for coordination of research and would serve as a forum for settlement of allocation disputes, thus providing the framework within which the exclusive fishery zones could be expanded to the size necessary to protect whole marine ecosystems and not just narrow segments of them.

If we continue single species protection regimes, the living resources of the sea cannot survive modern fishing techniques. If we cannot place responsibility for management of complete marine ecosystems under one authority, there is little chance of reversing the disastrous depletion of unmanaged stocks that is presently under way in the Bering Sea. If the unmanaged stocks are depleted, the managed stocks will follow them in time. One cannot reduce a part of the biomass without affecting the whole. The pollock of the Bering Sea have been fished from a state of absolute plenty to a state of possible peril in only five years. There is little time left.

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