

UNIVERSITY OF CALIFORNIA, SAN DIEGO

The Tragedy of Enclosure:
Fish, Fisheries Science, and U.S. Foreign Policy,
1920-1960

A Dissertation submitted in partial satisfaction of the requirements for the degree
Doctor of Philosophy

in

History (Science Studies)

by

Mary Carmel Finley

Committee in charge:

Professor Naomi Oreskes, Chair
Professor Michael Bernstein
Professor Tony Koslow
Professor John Marino
Professor Chandra Mukerji
Professor Daniel Vickers

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Chair

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2007

DEDICATION

In memory of my father, Howard Patrick MacDougall,
and my niece, Ella Delau MacDougall

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LIST OF ABBREVIATIONS

ATA	American Tuna Association
CPUE	Catch per Unit of Effort
CRPA	Columbia River Packers Association
FAO	Food and Agricultural Organization of the United Nations
GATT	General Agreement on Tariffs and Trade
IATTC	Inter-American Tropical Tuna Commission
ICES	International Council for the Exploration of the Sea
ICNAF	International Commission for the North Atlantic Fisheries
IFHC	International Fisheries Commission (International Pacific Halibut Commission after 1953).
ILC	International Law Commission
INPFC	International North Pacific Fisheries Commission
IPSC	International Pacific Halibut Commission
IPSFC	International Pacific Salmon Fisheries Commission
IWC	International Whaling Commission
MSY	Maximum Sustained Yield
POFI	Pacific Oceanic Fishery Investigations
RFC	Restoration Finance Corporation
SCAP	Supreme Commander Allied Powers

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PREFACE

Maximum Sustained Yield and I first met in the early 1980s. My husband, Carl, and I were living in Westport, Wa., where he was a salmon troller and I was a freelance writer. *National Fisherman* asked me to write a story about the adoption of the Groundfish Management Plan by the Pacific Fishery Management Council (PFMC). I read the plan, I talked to a few people, and I wrote a story about how successful it was going to be in managing the West Coast trawl fishery. I remember being told that as long as the plan's overall numerical harvest goals were being met, it didn't matter if some of the stocks were overfished. It never occurred to me to question that assumption.

By 1996, my husband had finally sold the boat and gotten out of fishing, but I was still writing about it, primarily for *The Oregonian* in Portland. When I attended the fall meeting of the PFMC, I found that biologists had done new assessments on six rockfish species. All were showing signs of decline; two were at less than 10 percent of virgin biomass, triggering provisions of the Sustained Fisheries Act, which had just been passed by Congress. The trawl fishery, a \$150 million industry in Washington, Oregon, and California, was facing collapse. Harvest levels for all fisheries would have to be slashed for 1997. Any fisherman who landed a rockfish incidentally was facing restrictions. Especially hard hit would be the small processing plants in the coastal communities, which might not have enough fish to keep their processing lines going. The industry was in turmoil, the coastal communities were aghast, the biologists were

defensive. The groundfish fishery, which everybody assumed was so conservatively managed, had suddenly imploded, crashing as thoroughly and suddenly as the salmon fishery had done a decade earlier. Instead of the fishery stabilizing at what was supposed to be MSY levels, and going forward at a reduced level, boats were suddenly out of business.

I couldn't understand why the fishermen, the scientists, and the managers, had not seen the crisis coming and moved to prevent it. Atlantic cod had collapsed, the West Coast salmon fishery had collapsed, now the West Coast groundfish fishery. What was wrong with fisheries management? Why had the science been so wrong? Since 1983, West Coast groundfish had been managed under the premise that up to 65 percent of a stock could be caught, bringing the fishery to what biologists thought to be a "sustainable" level, expressed mathematically as "F35." Somehow, the stocks had crashed through the F35 level. Scientists estimated rebuilding could take decades.

By then, I was working on a Master's degree at Oregon State University, and I took a seminar in History of Science with Ron Doel. I chose to write a paper on the history of MSY. On the shelves at the Valley Library, I found *The Japanese Fishing Industry, 1939*, produced by the Japan Times & Mail, a fascinating portrait of the Japanese fisheries before World War II. I knew the Japanese attempt to fish salmon in Bristol Bay in 1936 had to have been enormously controversial. I kept reading and came across a paper by British

biologist Raymond Beverton, written shortly before his death, in which he described the adoption of MSY at the Rome conference in 1955 as an essentially political decision, not a scientific one. I started to read everything I could find about the development of fisheries in the Pacific Ocean. The result is this dissertation, a political history of Maximum Sustained Yield.

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I have benefited from the information and advice from many scientists, including Sidney Holt, Jergen Westrheim, J. Richard Dunn, Tim Smith, Jim Lichatowich, Dan Bottom, Peter Lawson, and Bob Buckman. Discussions with historians of science Helen Rozwadowski, Jennifer Hubbard, Ron Rainger, Sara Tjossem, Katey Anderson, and Vera Schwach, helped me greatly. I would especially acknowledge J. Richard Dunn, Sidney Holt, Jim Lichatowich, Patricia Lindsey, Jeanie Senior, Bill Robbins, and Ron Doel, who were kind enough to read and point portions of the text. Howard Chiger helped with last-minute production.

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John Marino, who stepped in at the last minute to assist with my committee, and who generously awarded me travel funds to complete the rest of my research.

VITA

Education

- 2007 Doctor of Philosophy, History/Science Studies Program, University of California, San Diego.
- 2000 Master of Arts, Interdisciplinary Studies, Oregon State University, Corvallis, Or. 97331-2130. History, Political Science, and Speech Communications.
- 1997 Bachelor of Science, Summa cum laude. Oregon State University, Corvallis. Political science.

Publications

- 2003 *Two Paths Toward Sustainable Forests: Public Values in Canada and the United States*, Oregon State University Press. Edited by Bruce A. Shindler, Thomas M. Beckley, and Mary Carmel Finley.

Fields of Study

Major Field: History of Science

Minor Fields: Maritime History and

Science Studies

ABSTRACT OF THE DISSERTATION

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Professor Naomi Oreskes, Chair

The massive destruction of fish stocks during the last 100 years has created an enormous environmental problem with consequences that are poorly understood, both for the fish and for the human populations that depend upon them. Many think of the oceans as the ultimate commons, and believe that fish stocks collapsed because individual fishermen did not restrain their behavior. However, the collapse of world fisheries was not

caused by individual fishermen rushing to harvest but was the result of conscious policies adopted by the distant water fishing nations in general, and the U.S., in particular, to promote and expand global fisheries, not only for the fish, but for territorial reasons that were bound with foreign policy concerns during the Cold War. The distant water nations pushed for a policy of taking fish without restrictions, until critical biological points were estimated, then applying measures to slow or restrict the catch. The practical effect of this policy, known as Maximum Sustained Yield (MSY) was that distant water nations fished unhindered until countries began expanding their territorial limits to 200 miles during the 1970s. The policy greatly facilitated the rise of an industrial, global fishing system, creating fishing capacity that far exceeded the ability of stocks to reproduce. MSY was promoted as being grounded in conservation and sound science, but its adoption was greatly influenced by American foreign policy during this period. MSY also focused fisheries science on the narrow objective of determining harvest points, thus allowing the world's distant water nations, including the U.S., to forestall attempts by smaller and poorer nations to enclose their fishing stocks to protect them from foreign exploitation.

Introduction

Utilitarianism, Foreign Policy, and the Tragedy of Enclosure

The massive decline of fish stocks during the last 100 years has created an enormous environmental problem with consequences that are poorly understood, both for the fish and for the human populations that depend upon them. There are many aspects to this marine destruction, from pollution to changing environmental conditions, but it has only been recently that the role of fishing itself has received critical examination. For much of the last century, until very recently, fishing has been seen as playing a positive role in maintaining fish populations, culling old fish and creating conditions where younger fish could grow more quickly. The eminent Victorian scientist T. H. Huxley had declared in 1883 that the great fish stocks were inexhaustible, and by 1955, many scientists still thought that fishing was part of the natural mortality that stocks faced. Even scientists who thought that some stocks were overfished believed that when fishing was relaxed, the stocks would recover.

This view of the interactions between fishing and fish populations underlay the massive expansion of fishing effort after World War II, as new military and industrial technologies greatly expanded the ability of fishermen to catch and process increasingly large amounts of fish. Boats fished farther from home and stayed at sea for longer periods of time. The world fish catch increased at

an average rate of about seven percent about of seven percent a year, from 18.5 million in 1950, to 54.5 million by 1969, growth rates that were thought—or claimed—to be conservative, sustainable, and grounded in science.

Scientists now believe that the development of this industrial fishery played a major role in the removal of up to 90 percent of the largest fish in the sea.¹ The Food and Agricultural Organization of the United Nations (FAO) reported in 2002 that 75 percent of the world's commercially important marine fish stocks were either fully fished, overexploited, depleted, or slowly recovering from collapse.² Atlantic cod (*Gadus morhua*) has been fished into virtual extinction and many other species have been severely reduced.³ Especially hard hit have been slow-growing, long-lived species, such Orange roughy (*Hoplostethus atlanticus*) and West Coast rockfish (*Sebastes*) that live in the deep ocean.⁴

One reason for this massive decline is that there are few areas in the world's oceans where fishermen have not been able to follow fish. Sea-bed mapping, global positioning systems, fish-finding electronics, and lighter, stronger

¹ Peter Ward and Ransom A. Myers, "Shifts in Open-Ocean Fish Communities Coinciding with the Commencement of Commercial Fishing," *Ecology* 86 (4), 2005.

² *The State of the World's Fisheries and Aquaculture, 2002*. Food and Agriculture Organization of the United Nations. Rome, 2002.

³ Jeffrey A. Hutchings and Ransom A. Myers, "The Biological Collapse of Atlantic Cod off Newfoundland and Labrador," in *The North Atlantic Fisheries: Successes, Failures, & Challenges*. Ragnar Arnason and Lawrence Felt, eds. (Charlottetown: University of Prince Edward Island Press, 1995); R. J. Beamish, "New Information on the Longevity of Pacific Ocean Perch (*Sebastes Alutus*)," *Journal of the Fisheries Restoration Board of Canada*, 36 (1979).

⁴ Stephen Berkeley, Mark A. Hixon, Ralph J. Larson, and Milton S. Love, "Fisheries Sustainability via Protection of Age Structure and Spatial Distribution of Fish Populations," *Fisheries* 29 (8), (2004); Jennifer A. Devine, Krista A. Baker, Richard L. Haedrich, "Deep-Sea Fishes Qualify as Endangered," *Nature* 439 (5), Jan. 5, 2006.

nets, have all allowed fishing to penetrate the deepest marine canyons. Massive trawl gear, once thought to plow the ocean floor in the same way that a tractor tills a field, has been revealed to have done extensive damage to complex, slow-growing sea floor communities.⁵

The growth of the global fishing fleet and the depletion of fish stocks was the result of four linked and interwoven factors. The first factor was that for a short period of time, from 1930 to 1960, the enormous expansion of fishing led to conflicts involving the foreign policy objectives of many countries, especially industrial countries with large fishing fleets. This nexus between fishing and foreign policy led to the second factor: government resources pouring into fisheries, especially after 1945, as the developed nations aggressively sought to secure rights to additional fish for their fleets. The third factor was the systematic application of scientific technology, developed during World War II, primarily by the private sector, but mostly paid for and disseminated through government channels. The aim was to increase the efficiency of fishing and the utilization of the catch, but it resulted in harvest capacity far in excess of the reproductive capacity of fish stocks. The fourth factor was the influence of government policy on the development of fishery science. With the growing conflict over distant water fisheries, nations adopted scientific policies that justified their own actions. Japan, Britain, and the Latin American countries of Peru, Ecuador, and Chile, all developed their own variations on fisheries science. Yet it was the American

⁵ Kristina M. Gjerde and David Freestone, "Unfinished Business: Deep-Sea Fisheries and the Conservation of Marine Biodiversity Beyond National Jurisdictions," *The International Journal of Marine and Coastal Law*, 19, No. 3 (2004), 209-222, 213.

ideas about fishery science that were adopted in most national and international fishery conventions. These ideas were encapsulated in the theory known as Maximum Sustained Yield (MSY).

This dissertation examines the development of Maximum Sustained Yield during 1920 to 1960. It is an expressly ideological and political story, because the American belief in the efficacy of their conservation efforts, despite empirical evidence to the contrary, and because the U.S. State Department explicitly merged political goals with scientific one.

A critical element in the development of this ideology was the rivalry between the two great Pacific fishing powers, the U.S. and Japan. Between 1930 and 1960, both nations sought dominance in the Pacific fisheries. Historian Walter LaFeber has written that the history of Japan and U.S. is one of a series of acrimonious clashes that began with the arrival of Admiral Matthew Perry in Japan in 1854. Since then, the two countries have clashed repeatedly over different forms of capitalism.⁶ This dissertation explores another clash: over the shape and substance of modern fisheries science. This is also a story of a clash of capitalism, as the rivalry between the two countries, before, during, and after World War II, resulted in policies that greatly increased fishing capacities, leading directly to the subsequent decline of many stocks. The clash came on two fronts, and involved two of the world's great fish species, the salmon runs of the North

⁶Walter LaFeber, *The Clash: U.S.-Japanese Relations Throughout History* (New York and London: W.W. Norton & Co., 1997), xviii.

Pacific Ocean, and the tuna of the equatorial Pacific. The conflict was not only over who would catch the fish, but also over the science that would be used to manage them.

I contend that the pivotal event in the development of fisheries in the Pacific was a Japanese decision in 1938 to mount a “scientific” exploration of the rich sockeye salmon runs of Alaska’s Bristol Bay, international waters where the Americans enjoyed exclusive fishing rights. Despite evidence that Bristol Bay stocks were overfished, the Americans argued that the fish were being conserved and were scientifically managed. After wide-spread protests, the Japanese withdrew the salmon proposal, and the fishing controversy was soon engulfed in other tensions between the two countries.

In 1945, President Harry Truman issued a proclamation claiming that the U.S. had the right to create conservation zones adjacent to its coast, to protect runs of fish. The objective of the proclamation was to prevent the return of the Japanese to Bristol Bay, but the immediate result was a cascade of territorial claims from Latin American countries, unhappy with American tuna boats fishing off their coasts, much as the Japanese wanted to do at Bristol Bay. In the meantime, during the six years of the American Occupation of Japan, the U.S. sought to remake Japanese fisheries science in line with American methods and objectives. American policies swiftly rebuilt Japanese fishing capacity, exceeding pre-war levels by 1947. In the guise of the humanitarian goal of feeding the Japanese people, the Supreme Commander Allied Powers (SCAP) resumed

Japanese whaling off Antarctica, and sent the Japanese tuna fleets back to the Mandated Islands in 1950. The whale meat was intended for the Japanese; tuna was exported to the United States.

These events helped shape the emergence of both modern fisheries science and fisheries management. Political, economic, and social events during this period shaped American fishery science into the policy of MSY. The best definition of MSY comes from the man who introduced it into American fisheries policy in 1949, Dr. Wilbert McLeod Chapman, an ichthyologist from the University of Washington. Conflicts over fishing and territorial claims had grown so intense that by 1948 the State Department had appointed a fisheries advisor; Chapman was the first to hold the office. "The policy of the United States Government regarding fisheries in the high seas is to make possible the maximum production of food from the sea on a sustained basis year after year," Chapman wrote.⁷

MSY was the basis for a policy that was designed to prevent Japanese fishing boats from entering Alaskan waters, while allowing American tuna boats to continue to fish for bait off Latin America, despite Latin American concerns about American tuna boats depleting coastal bait stocks. Maximum Sustained Yield was based in a utilitarian philosophy that held that resources should be used. Not to harvest fish was wasteful. The policy reflected Progressive ideals of efficiency and expertise, creating management systems

⁷ Wilbert Chapman, "United States Policy on High Seas Fisheries," *Department of State Bulletin*, Vol. XX No. 498, Jan. 16, 1949, 67-80.

where trained experts would be able to estimate when the maximum harvest had been attained, and when harvest would be slowed or halted. The model suggested a precision that fisheries science has not been able to attain.

It also reflected the growing industrialization of nature after 1920, as scientific concepts of industrial management were applied to natural resource systems in an effort to standardize and increase production.⁸ These concepts were also reflected in the statutory mandates of the U.S. Forest Service and the Bureau of Land Management.⁹ In the case of fisheries, many scientists (including Chapman) believed that fish populations reproduced so abundantly that fishing could never seriously deplete them. Just as the removal of old trees opened space in the forest for more seedlings, so harvesting fish created conditions that would replenish the population. It was a benign view of a human activity that had taken place for thousands of years, akin to the belief by farmers in the Southwestern United States that the rain would follow the plough. Nature would provide what humans needed to flourish. But as the technology developed during World War II was increasingly shifted to the fishing industry, man's ability to increase fish harvests were about to greatly accelerate.

Six years after the American adoption of MSY, Chapman and his successor at the State Department, William C. Herrington, maneuvered to have MSY adopted as the goal of international fisheries management at a political

⁸ Paul R. Josephson, *Industrialized Nature: Brute Force Technology and the Transformation of the Natural World* (Washington, Covelo, London: Island Press, 2002). 9.

⁹ Hanna J. Cortner and Margaret Moote, *The Politics of Ecosystem Management* (Washington, D.C.: Island Press, 1999), 14.

meeting in Rome. The policy allowed developed nations, especially the United States, Britain, and Japan, continuing to fish off the coasts of less developed countries-- unless those countries could prove scientifically that stocks were being depleted and the attainment of MSY jeopardized—something that, of course, a poor nation with few scientific resources would scarcely be able to do. One of the legacies of this 1955 decision in Rome was the establishment of a pattern that is still repeated 60 years later, of taking as many fish as possible, until critical biological thresholds have been passed and exceeded.

The Land Grab in the Oceans

The exploitation of the oceans after World War II can be seen as the last great imperial grab for the riches of the sea. Wealthy nations with developed fisheries insisted that fishing could only be regulated on the basis of scientific proof that stocks were overfished. Poor nations that did not have the resources to devote to the development of science were made dependent on the research programs developed by the rich countries.

The expansion of fisheries after World War II was typically described as being grounded in the humanitarian desire to increase the global supply of protein, to prevent hunger and famine in the aftermath of global war. But most of the higher-quality fish was caught and shipped to wealthy countries. Much of the remainder was processed into meal, increasingly fed to the animals of wealthy

countries. Efforts by poorer countries at restricting fisheries were resisted. The doctrine of the freedom of the seas helped create the idea that the oceans were a commons, open to all.

In his famous 1968 article, “The Tragedy of the Commons,” ecologist Garrett Hardin argued when a pasture was open to all herdsmen, each would try to graze as many cattle as possible. But eventually a day would come when “the inherent logic of the commons remorselessly generated tragedy,” and so many cattle were grazed that the commons collapsed.¹⁰ Hardin wrote:

Each man is locked into a system that compels him to increase his herd without limit—in a world that is limited. Ruin is the destination towards which all men rush, each pursuing his own best interest in a society that believes in the freedom of the commons. Freedom in a commons brings ruin to all.¹¹

The analogy of Hardin’s commons is often extended to describe the oceans, the ultimate commons where there is limited ownership, and there is no incentive to conserve, since fish can easily be harvested by the next boat. Hardin couched his argument in terms of the freedom of the individual herdsman to make his own decisions about the number of cattle he would graze on the commons. But the research presented in this dissertation shows that the enormous growth of the fishing industry after World War II was the result of deliberate government policies, not individual actions.

Many nations, particularly Iceland, Mexico, and Latin America, sought protection for their fish stocks, but the developed fishing nations—including the

¹⁰ Garrett Hardin. “The Tragedy of the Commons.” *Science*. 162, Dec. 13, 1968. 1243-1248, 1244.

¹¹ *Ibid*, 1244.

U.S., Japan, and Britain—used the concept of the freedom of the seas and the three-mile limit to hold off, for as long as possible, the enclosure of the seas. Atlantic cod collapsed not because individual boats rushed to fish on the Grand Banks of Newfoundland, but because of deliberate government policies that promoted fishing to fulfill foreign policy objectives—and to fulfill economic objectives of maximizing a country's share of the free wealth of the oceans. When fisheries became uneconomic, further government policies subsidized fishing so it could continue, for political and social reasons.

MSY, as defined by American policy makers, effectively shut off poor nations as they tried to enclose their fishing areas from richer countries. The freedom of the seas, first championed by Britain and then upheld by the U.S., did not allow coastal states to have a say in how the fish off their coasts were to be caught. The Ocean commons was expressly maintained by the distant water nations, which sought to fish unimpeded by conservation concerns of coastal countries.

The Literature

There are voluminous scientific, economic, and legal analyses about the problems of the fishing industry, as well as the results of many national and international commissions. But the body of work on the historical development of fisheries is slim, as are works that attempt to place fisheries within the context of other political, economic, and social history. The most attention has been paid to

the development of fisheries in Europe's North Sea and in the Atlantic Ocean.¹²

The decline of individual fish stocks, or fishing in individual regions, has also been chronicled, often by journalists.¹³ The collapse of Atlantic cod, fished to commercial extinction in the 1980s off the Grand Banks of Newfoundland, has been well-documented.¹⁴ There is also a large literature on Pacific salmon, with works by legal scholar Arthur McEvoy and historian Joseph Taylor, as well as by biologist Jim Lichatowich and geomorphologist David R. Montgomery.¹⁵ Biologist Collum Roberts has written a history of fishing, from an ecological viewpoint, covering the 1700s to the present.¹⁶

However, many of the decisive events in the development of modern industrial fisheries took place in the Pacific Ocean, where fishery development

¹² Helen M. Rozwadowski, *The Sea Knows No Boundaries: A Century of Marine Science under ICES* (Seattle: University of Washington Press, 2002); Robb Robinson, *Trawling: The Rise and Fall of the British Trawl Fishery* (Exeter: University of Exeter Press, 1996); Jon Th. Thor, *British Trawlers in Icelandic Waters: A History of British Steam Trawling off Iceland, 1889-1916*, and *The Anglo-Icelandic Fisheries Dispute, 1896-1897*, and *The Anglo-Icelandic Fisheries Dispute, 1896-1897*, trans. Hilmer Foss (Reykjavik: Fjölvi Publishers, 1992); Dietrich Sahrhage and Johannes Lundbeck, *A History of Fishing* (Berlin: Springer-Verlag Berlin Heidelberg, 1992); Margaret E. Dewar, *Industry in Trouble: The Federal Government and the New England Fisheries* (Philadelphia: Temple University Press, 1983); and Sean Cadigan, *Hope and Deception in Conception Bay* (St. John's: Memorial University Press, 1995).

¹³ Michael Harris, *Lament for an Ocean* (Toronto: McClelland & Stewart Inc., 1998), and Charles Clover, *The End of the Line: How Overfishing Is Changing the World and What We Eat* (New York and London: The New Press, 2006).

¹⁴ Alan Christopher Finlayson, *Fishing for Truth: A Sociological Analysis of Northern Cod Stock Assessments from 1977-1990* (St. John's: Memorial University of Newfoundland, 1994); Miriam Wright, *A Fishery for Modern Times: The State and the Industrialization of the Newfoundland Fishery, 1934-196* (Don Mills, Ontario: Oxford University Press, 2001); Rognvaldur Hannesson, *Fisheries Mismanagement: The Case of the North Atlantic Cod*, (Oxford and London: Fishing News Books, 1996); William W. Warner, *Distant Water: The Fate of the North Atlantic Fisherman* (Boston: Little, Brown and Company, 1977); Mark Kurlansky, *Cod: A Biography of the Fish that Changes the World* (New York: Walker and Company, 1997).

¹⁵ Arthur F. McEvoy, *The Fisherman's Problem: Ecology and Law in the California Fisheries* (Cambridge: Cambridge University Press, 1986); Joseph E. Taylor, III, *Making Salmon: An Environmental History of the Northwest Fisheries Crisis* (Seattle: University of Washington Press, 1999); David R. Montgomery, *King of Fish: The Thousand-Year Run of Salmon* (Boulder: Westview Press, 2003).

¹⁶ Collum Roberts, *The Unnatural History of the Sea* (Washington, D.C.: Island Press, 2007).

(with the exception of salmon) has not been well-studied. Fisheries in the Atlantic developed regionally over hundreds of years. But development in the Pacific was much more compressed.¹⁷ There were regional fisheries in the Pacific, in addition to highly developed native fisheries, but what distinguishes the Pacific is the rapid expansion of global fisheries after 1930, when new technologies spread throughout the fishing world, exacerbating existing conflicts over access to high-value species of fish, especially salmon and tuna. This rapid industrialization was facilitated by government policies that channeled money into the industry, in hopes that fishing boats in the equatorial Pacific would help to constitute a territorial claim, not only to the fish, but to the waters themselves.

Legal scholars have addressed Pacific fisheries, especially in the context of the development of international law after the 1930s. Harry N. Scheiber has written extensively about the development of oceanography, fisheries and international law. Much of his work was published in the 1980s, before the systematic depletion of ocean species had been clearly established.¹⁸ Scheiber generally wrote approvingly of the roles that American fisheries scientists Wilbert

¹⁷ John G. Butcher, *The Closing of the Frontier: A History of the Marine Fisheries of Southeast Asia, 1850-2000* (Singapore: Institute of Southeast Asian Studies, 2004).

¹⁸ Harry N. Scheiber, "Origins of the Abstention Doctrine in Ocean Law: Japanese-U.S. Relations and the Pacific Fisheries, 1937-1958," *Ecology Law Quarterly* 16 (1989); Harry N. Scheiber, "Wilbert Chapman and the Revolution in U.S. Pacific Ocean Science and Policy, 1945-1951," in *Nature in Its Greatest Extent: Western Science in the Pacific*, Roy MacLeod and Philip F. Rehbock, eds., (Honolulu: University of Hawaii, 1988); Harry N. Scheiber, "Pacific Ocean Resources, Science, and the Law of the Sea: Wilbert M. Chapman and the Pacific Fisheries, 1945-1970," in *Ecology Law Quarterly* 13(38) (1986); Harry N. Scheiber, "U.S. Policy, the Pacific Tuna Economy, and Ocean Law Innovation: The Post-World War II Era, 1945-1970," in *Bringing New Law to Ocean Waters*, David D. Caron and Harry N. Scheiber, eds (Berkeley: University of California Press, 2004); Harry N. Scheiber, *Inter-Allied Conflicts and Ocean Law, 1945-1953: The Occupation Command's Revival of Japanese Whaling and Marine Fisheries* (Taipei, Taiwan: Institute of European and American Studies, Academia Sinica, 2001).

Chapman, William Herrington, and Milner B. Schaefer played in the development of modern American fisheries policy and science. But he neglected a darker side to their efforts: the creation of a management framework that had led to the decline of so many species, and the failure to achieve its own stated goals of feeding the world (especially the poor) while protecting the stocks. All three scientists played major policy roles during this period. They were imbued with the desire to expand American fisheries, especially for high-seas tuna, off Latin America, and in the Mandated Islands, where the Japanese had harvested so many tuna before the war. They justified their expansion through the theory of MSY, which appeared to provide a scientific basis for the expansion of American fisheries. But did it?

The Critique of MSY

It is now well-established that MSY failed to preserve fish populations. In his "Epitaph for MSY," published in 1977, Canadian zoologist Peter L. Larkin outlined the theory's flaws: that it looked at each fish species in isolation, and did not account for environmental fluctuations.¹⁹ Other scientists have argued that harvest levels have often been set too high and the actual catches underestimated.²⁰ With the rise of fishery models, has come criticism that despite

¹⁹ Peter A. Larkin, "An Epitaph for the Concept of Maximum Sustained Yield," *Transactions of the American Fisheries Society* 106, no. 1 (1977).

²⁰ Daniel Pauly and Jay Maclean, *In a Perfect Ocean: The State of Fisheries and Ecosystems in the North Atlantic Ocean* (Washington, D.C.: Island Press, 2003). Daniel L. Bottom, "To Till the Water: A History of Ideas in Fisheries Conservation," in *Pacific Salmon and Their Ecosystems: Status and Future Options*, ed. Deanna J Stouder, Peter A. Bisson, Robert J. Naiman (New York: Chapman & Hall, 1997).

the increased complexity and sophistication, models to often focus on single species.²¹ Economists have documented the amount of over-capitalization in the global fishing fleet, leading to economic waste (such as by-catch, a substantial problem) and unsustainable fishing practices. Global estimates of that waste are about \$60 billion a year; the U.S. share alone is estimated at \$2.9 billion a year.²² Yet while drastically altering the productivity of many fish stocks, fishery policies have not succeeded in the social goals of improving the lot of fishermen, especially those in many undeveloped countries.²³ Despite the humanitarian rhetoric underlying the expansion of fishing, the policies failed to provide protein to poorer countries.

Biologist Tim S. Smith has argued that MSY was implemented through three partial theories, published in 1954, by scientists from three different countries. The Yield per Recruit Theory, by British scientists Raymond Beverton and Sidney Holt, dealt with estimating the maximum yield from each cohort of a fish population. The Spawner and Recruit Theory, devised by Canadian William Ricker, estimated the optimum number of spawners for each year class of fish. And Surplus Production Theory, developed by Milner B. Schaefer, estimated the

²¹ Orrin H. Pilkey and Linda Pilkey-Jarvis. *Useless Arithmetic: Why Environmental Scientists Can't Predict the Future*, (New York: Columbia University Press, 2007), 21.

²² Francis T. Christy, "Economic Waste in Fisheries: Impediments to change and conditions for improvement." 28-39, in E.L. Pikitch, D.D. Huppert, and M. P. Sissenwine, eds. *Global Trends: fisheries management*. American Fisheries Society Symposium 20. Bethesda, Maryland.. 1997.

²³ James R. McGoodwin, *Crisis in the World's Fisheries: People. Problems, and Politics* (Stanford: Stanford University Press, 1990).182. Connor Bailey. "The Blue Revolution: The Impact of Technological Innovation on Third-World Fisheries." *The Rural Sociologist*. 5 (4) July 1985. 259-266.

maximum total harvest of fish every year from a standing population.²⁴ Smith argued that the three theories came to dominate fishery research for more than four decades but that biologists were unable to find a way to unify them into a comprehensive management regime.²⁵ The research directive developed at the Rome conference in 1955 “defined narrow terms of reference for the future study of fishery biology,” Smith wrote.²⁶

I contend that the three partial theories could not be successfully unified in a comprehensive scientific theory because MSY was a policy camouflaged as science. American scientists and policy makers pushed for the adoption of MSY as a way to justify their preferred policy of the freedom of the seas. It was an important philosophical cornerstone for a foreign policy of open skies and open seas for American planes, ships, submarines, and fishing boats.²⁷ The American pressure to adopt MSY in 1955 brought criticism from British fisheries scientist Michael Graham, and from D.B. Finn, director of the fisheries section of the Food and Agricultural Organization of the United Nations, among others. But this criticism was brushed aside as academic nit-picking by scientists and policy makers determined to support the foreign policy goals of the distant water countries, and especially the U.S.

²⁴ Tim D. Smith. *Scaling Fisheries: The Science of measuring the effects of fishing, 1855-1955*. (Cambridge: Cambridge University Press, 1994). 3.

²⁵ Ibid, 3.

²⁶ Smith, 7.

²⁷ Thomas G. Paterson, *On Every Front: The Making and Unmaking of the Cold War* (New York, London: W.W. Norton & Company, 1992).

But the paradox of open seas and open skies is that the policy effectively closed those very seas (or enclosed them) for nations that were rich, powerful, and had developed fisheries, increasingly capable of operating far from home for long periods of time. The actions of Japan, the U.S., and the Britain, the primary distant water nations, were increasingly resisted by poorer nations after World War II, who sought to enclose their own waters.

A Cold War Story?

As the American military planned a series of bases throughout the equatorial Pacific after World War II, fishing boats were seen as an additional claim to the territory. Equally important and less studied implications of the Cold War lie in another direction: the environmental impact of foreign policy. The post-war American government used trade, tariffs, and treaties to reshape international economic relations in ways that contributed to the destruction of fish resources.²⁸

The development of fisheries after the war is also a North-South story, as Latin American countries protested the presence of American fishing boats off their shores. During the 1950s, they acted to enclose their waters, proposing a regional 200-mile limit, and claiming the authority to regulate boats navigating through their waters. This attempt at controlling American fishing was seen as a major challenge to American foreign policy goals, and deeply resisted.

²⁸ Alfred E. Eckes, "Trading American Interests." *Foreign Affairs*. 71(4) (1992), 135-154. 136.

MSY was grounded in Cold War politics, but it was also grounded in a profoundly anthropocentric approach to explaining the oceans.²⁹ It saw the oceans in essentially agricultural metaphors; the ocean could be farmed, we could raise as many fish as we needed. Wild fish were crops to be harvested.³⁰ Sending large nets across the bottom of the oceans was akin to plowing.³¹ This understanding, we now know, was incorrect, and the agricultural metaphors unfortunate. We do not farm fish so much as we hunt them—in some cases to the brink of extinction. Another erroneous assumption was that a percentage of all fish populations could safely be harvested, since the “surplus” fish weren’t needed for biological reproduction.

Fisheries science has done much to uncover the subtle and important relationships between fish and fishing. But even today, MSY remains at the heart of fisheries science and fisheries management and is firmly entrenched in legal and policy documents, treaties, and commissions. While it has sometimes been

²⁹ Poul Holm, Tim D. Smith, and David J. Starkey, “Introduction,” in *The Exploited Seas: New Directions for Marine Environmental History*, Poul Holm, Tim D. Smith, and David J. Starkey, eds. (St. John’s, Newfoundland: Memorial University, 2001).

³⁰ Daniel Bottom, “To Till the Water: A History of Ideas in Fisheries Conservation,” in *Pacific Salmon and Their Ecosystems: Status and Future Options*, Deanna J. Stouder, Peter A. Bisson, and Robert J. Naiman, eds. (New York: Chapman & Hall, 1997), 569-597.

³¹ Daniel Pauly, Villy Christensen, Sylvie Guenette, Tony J. Pitcher, U. Rashid Sumaila, Carl J. Walters, R. Watson, and Dirk Zeller, “Toward Sustainability in World Fisheries,” *Nature*, 418, Aug. 8, 2002, 689-695; Jeremy Jackson, Michel X. Kirby, Wolfgang H. Berger, Karen J. Bjorndal, Lewis W. Bostford, Bruce J. Bourque, Roger H. Bradbury, Richard Cooke, Jon Erlander, James A. Estes, Terence J. Hughes, Susan Kidwell, Carina B. Lange, Hunter S. Lenihan, John M. Pandolfi, Charles H. Peterson, Robert S. Steneck, Mia T. Tegner, Robert W. Warner, “Historical Overfishing and the Recent Collapse of Coastal Ecosystems,” *Science* 293 No. 5530 (2001) 629-637.

modified (such as altered from maximum harvest to optimum harvest), such restraints are recent, and do not substantially alter the thrust of the policy, which has been to encourage relatively high harvests of fish populations.

The analysis of the failures of MSY has tended to come from scientists and economists, who have looked at the problems in relative isolation, trying to “fix” the science and ignoring the political context in which the science was shaped.³² My analysis has attempted to look at the forces that shaped the science of MSY, and how the State Department used MSY as a tool of diplomacy. This story is not a tragedy of the commons, but a tragedy of enclosure, as the U.S. sought to expand its fishing territory as part of the control it exercised on the high seas after World War II. In the process, U.S. actions substantially shaped both fisheries science and fisheries management, and justified the overharvest of many fish populations.

³² Alan Christopher Finlayson, *Fishing for Truth: An Sociological Analysis of Northern Cod Stock Assessments from 1977-1990*. (St. John's, Newfoundland: Memorial University, 1994). 149.

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Chapter One

The “Inexhaustibility” of the Fish in the Sea

The trail of fishery science is strewn with opinions of those who, while partly right, were wholly wrong.¹

Michael Graham, *The Fish Gate*

“London is thoroughly permeated by the interest in fish and fisheries,”

George Brown Goode wrote for the Aug. 3, 1883 edition of *Science* magazine.²

Goode, who would later become the second director of the U.S. Fish Commission, headed the American delegation to the International Fisheries Exhibition, held in London from May through October of 1883. The Exhibition was a smashing success, in part because of the American exhibits, which featured stuffed and mounted fur-seals, walrus tusks, a leatherback tortoise, and over four hundred species of fish, preserved in jars of alcohol. American fish were delivered daily to London from New York and there was an extensive display of relief maps of the Atlantic coast, marking the fishing and whaling grounds. There were also examples of fishing gear and canning equipment, as well as a display of the techniques used at the Woods Hole marine laboratory for hatching cod

¹ Michael Graham, *The Fish Gate* (London: Faber and Faber Limited, 1943). 129.

² George Brown Goode, “The International Fisheries Exhibition—Third Paper,” *Science* 2, no. 26 (August 3, 1883): 129.

eggs.³ The collected works of American biologists were also on display, and it was hoped a copy would find its way to a British museum. As an informant wrote for *Science* magazine in 1883, “one may be safe in remarking that there is no country in the world in which any of the great explorative industries have been subjected to a more thorough investigation from both a scientific and an economic point of view than the fisheries of the United States are now undergoing at the hands of the national fish commission.”⁴ The American exhibit took honors, enhancing American prestige in matters of agriculture, fishing, and technology.⁵ Participation in the Exhibition contributed to the international image of the U.S. as an enlightened leader in marine studies and fisheries.⁶

A conference was organized as part of the Exhibition, and the keynote address came from Thomas Henry Huxley (1825-1875), the brilliant zoologist, paleontologist, and defender of Charles Darwin’s theories of evolution. Huxley, who had a long association with the fisheries, declared that the human impact on commercial fish species was negligible compared to the forces of natural predation in the ocean, and that attempts to regulate the fisheries were useless:

“...that the cod fishery, the herring fishery, the pilchard fishery, the mackerel fishing, and probably all the great sea-fisheries, are

³ Tim D. Smith. *Scaling Fisheries: The Science of Measuring the Effects of Fishing, 1855-1955.* (Cambridge: Cambridge University Press, 1994), 55.

⁴ *Science* 1, no. 15 (May 18, 1883): 417-418.

⁵ Merle Curti, “America at the World Fairs, 1851-1893,” *American Historical Review* 55, no.4 (1950): 836.

⁶ Theodore Whaley Cart, “The Federal Fisheries Service, 1871-1940: Its Origins, Organization, and Accomplishments,” *Marine Fisheries Review* 66, no. 4 (2004): 8.

inexhaustible; that is to say that nothing we do seriously affects the number of fish. And any attempt to regulate these fisheries seems consequently...to be useless."⁷

It was a stirring talk from Darwin's bulldog. Twenty years earlier, Huxley had been responsible for lifting a series of restrictive regulations on British fishermen, because there was no evidence they had conserved fish stocks. Between 1860 and 1883 in Britain, there had been three Royal Commissions of Inquiry into the fishing industry, as the Ministry tried to determine if regulations could arrest the troubling decline in the catches. The first Commission, in 1862, had examined a complaint by driftnet herring fishermen, who blamed longliners for their declining catches. The driftnetters asked for regulations for the longliners. The Commission declared such complaints to be unscientific and prejudicial to more "productive modes of industry."⁸

Huxley maintained his conviction-- that the sea fisheries were inexhaustible-- through all the Royal Commissions on which he sat, including the one in 1883.⁹ Some fishermen blamed the newly-introduced trawl nets for the decline in stocks and wanted the new gear to be banned, or at least restricted. But the 1883 Commission had no statistical data to prove whether or not the nets were the cause of a decline in flatfish production. The Commission did warn that the use of trawl nets could reduce the number of fish on a particular ground.¹⁰

⁷ Tim Smith, *Scaling Fisheries: The Science of Measuring the Effects of Fishing, 1855-1955* (Cambridge: Cambridge University Press, 1994), 53.

⁸ Mark Kurlansky, *Cod: A Biography of the Fish That Changed the World* (New York: Walker and Company, 1997), 122.

⁹ Helen M. Rozwadowski, *The Sea Knows No Boundaries: A Century of Marine Science Under ICES* (Seattle: University of Washington Press, 2002), 28.

¹⁰ Ibid.

But the harm was assumed to be local and there was nothing to indicate that stocks overall were being harmed by the new technology. Without proof of harm, fishing was allowed to continue without restrictions. It was an early example of placing the burden of proof on those who claimed harm.

Huxley's argument was that fish produced such huge numbers of eggs that the sea could not support all the fish that were hatched. There was no harm in utilizing fish as food, since only a small portion of the fish could be caught. Huxley based his position on the data that were available to him, a study of shoals of cod in the north of Norway, and estimates showing that cod ate far more herring each year than Norwegian fishermen were able to catch.¹¹ In other words, the staunch evolutionist believed natural predation was nature's controlling force.

As biologist Tim Smith has pointed out, Huxley had some caveats to his opinions: he limited his remarks to pelagic sea fishes and the current state of fishing gear, which did not include nets drawn by steam trawlers, gear that festooned the International Fisheries Exhibition.¹² In the industrial spirit of the Exhibition and the era writ large, the organizers addressed the question of how new fishing gear could be used to the "fullest possible advantage,"—catching more fish.

In the audience as Huxley spoke was American naturalist George Brown Goode (1851-1896), who later wrote with approval in the pages of *Science*:

¹¹ D.H. Cushing, *The Provident Sea* (Cambridge: Cambridge University Press, 1988), 117.

¹² Tim Smith, *Scaling Fisheries: The Science of Measuring the Effects of Fishing, 1855-1955* (Cambridge: Cambridge University Press, 1994), 53.

“Professor Huxley’s inaugural address has caused great unhappiness to those who believe in legislative protection without limit or reason.”¹³ Goode’s opinion foreshadowed what would later become a guiding principle of U.S. fisheries management, that there was little reason to control fishing, and that the burden of proof should fall on those who claimed fishing should be restricted.

The London exhibit had been an enormous success for Goode and the newly formed U.S. Fish Commission. Huxley’s views on the indomitable force of nature were a fashionable nineteenth-century belief. The age was marked by tremendous optimism regarding the ability of science to harness and control the natural world.¹⁴ Goode might even have listened a little smugly to Huxley, since the Americans had solved the problem of having to regulate fishers over declining numbers of stocks. The Americans were making more fish.

But while Huxley had in fact tempered his remarks, what would be remembered was the idea that the great sea fish were inexhaustible. Historian Jennifer Hubbard has suggested that Huxley’s stature was such that it inspired scientists for the next fifty years, who placed their faith in Huxley rather than the growing evidence that fisheries were indeed being depleted.¹⁵ It took until the 1930s for scientists in Europe and North America to compile sufficient evidence to prove that fishing not only could affect the abundance of marine fishes, but

¹³ George Brown Goode, “The International Fisheries Exhibition—Third Paper,” *Science* 2, no. 26 (August 3, 1883): 130.

¹⁴ Mark Kurlansky, *Cod: A Biography of the Fish That Changed the World* (New York: Walker and Company, 1997), 121.

¹⁵ Jennifer Hubbard, *A Science on the Scales: The Rise of Canadian Atlantic Fisheries Biology, 1898-1939* (Toronto: University of Toronto, 2006), 162.

could reduce the abundance of certain stocks to the point where their potential yield was reduced.¹⁶ Yet even then, their arguments would be largely brushed aside in favor of other considerations—considerations that provide the focus for this dissertation.

1.1 Early American Fisheries

Fishing was an important early cornerstone of industrial development in the early days of the New England colony.¹⁷ A second cornerstone was whaling, viewed as a kind of fishing. By the mid-1840s, three quarters of the world's whaling fleet was American.¹⁸ But with the industrialization of the rest of the economy, and the far more plentiful opportunities to obtain protein from animals, American fishing and whaling dwindled to a smaller part in the regional economies and to a very small part of the national economy. Perhaps this is the reason that the place of fishing in the American economic and political process has always been nebulous, with the authority to regulate split between the federal government and the states, and with competing user groups fighting, often fiercely, for a greater share of often declining resources.

In truth, neither the state nor the federal government wanted to regulate early fisheries. Government was involved in expanding fishing opportunities, not

¹⁶ R. Hilborn, C. J. Walters, and D. Ludwig. "Sustainable Exploitation of Renewable Resources." *Annual Review of Ecology and Systematics*, 26 (1995): 46.

¹⁷ Raymond McFarland, *A History of the New England Fisheries* (New York: University of Pennsylvania, 1911), 19.

¹⁸ John Curtis Perry, *Facing West: Americans and the Opening of the Pacific* (Westport: Praeger, 1994), 92.

restricting them. Until 1860, the government of Massachusetts paid a bounty on the catch of cod.¹⁹ The rapid industrialization of New England had obviously degraded the river habitat of Atlantic salmon and shad, but it was seen as an “unfortunate but unavoidable cost of ‘civilization.’”²⁰ The political response to overfishing and declining runs was not to restrict individual effort, but to attempt to find ways to create more fish. If you could make more fish, then you did not have to regulate the harvest among competing users. Thus, surpassing natural biological limits through the use of modern science was an early goal of the first American fishery scientists. Just as foresters wanted to increase forests by planting the right kind of trees, so fishery scientists planned to increase the number of fish through hatcheries.

Interest in fish culture grew in response to the decline of fisheries in the eastern United States. By 1850 there were few anadromous runs left, but there was enormous interest in hatcheries and extravagant promises were made as to how many additional fish could be created.²¹ Pond culture for farmers was heavily promoted. Articles promised that an acre of water could produce more food than an acre of land. As one enthusiast put it, fish was a crop that didn’t need fertilizer, required no care, yet could be harvested for almost nothing. “We

¹⁹ Samuel Eliot Morison, *The Maritime History of Massachusetts, 1783-1860* (Boston: Houghton Mifflin Company, 1941), 313.

²⁰ Joseph E. Taylor, III, *Making Salmon: An Environmental History of the Northwest Fisheries Crisis* (Seattle: University of Washington, 1999), 68; and Daniel Vickers. “Those Damned Shad: Would the River Fisheries of New England Have Survived in the Absence of Industrialization?” *William and Mary Quarterly*. 61. 3rd Series. 2004. 648-712.

²¹ *Ibid.*, 69.

have tilled the ground four thousand years, we have just begun to till the water.”²²

Technology seemed to offer the promise of creating more fish by finding different ways to harvest the bounty of the oceans. This theme, of the potential abundance of the oceans, and of the ability of technology to enable men to tap it, would re-occur throughout the next century. With the help of man, the fish runs could be made inexhaustible.

But by 1870, runs of Atlantic salmon and shad throughout New England had declined severely, as water was diverted for agriculture and industrial dams were built. As runs dwindled, fishermen quarreled over what gear type was to blame.²³ Congress appropriated \$5,000 in 1871 to create the U.S. Fish Commission to investigate the extent and causes of New England fishery depletion, and to build hatcheries to create more fish.

Hatcheries were seen as an indicator of modern science. There was no systematic examination of the efficacy of releasing hatched fish, but the anecdotal evidence was freely repeated. Between 1872 and 1940, the U.S. Fisheries Service planted or distributed for planting a staggering 200 billion fish and other aquatic animals in national and international waters. By the turn of the century some thirty different fish species were being cultivated, 90 percent of them of commercial value. Three-quarters of the resources were spent on

²² Daniel L. Bottom, "To Till the Water: A History of Ideas in Fisheries Conservation," in *Pacific Salmon and Their Ecosystems: Status and Future Options*, ed. Deanna J Stouder, Peter A. Bisson, Robert J. Naiman (New York: Chapman & Hall, 1997), 573.

²³ Daniel Vickers, "Those Damned Shad: Would the River Fisheries of New England Have Survived in the Absence of Industrialization?," *William and Mary Quarterly* 61, 3rd. series (2004).

species such as cod, haddock, flounder, and halibut, high seas species where it was difficult to measure results.²⁴ The hatcheries got around this awkward issue as they do today, by emphasizing how many fish were released, sidestepping (or ignoring) the question of how many fish survived and contributed to the catch.

Other nations also saw the promise of technology to create more fish. The Norwegians founded a commercial hatchery for cod (*Gadus morhua*) in 1882. It was taken over by the Norwegian government in 1916 and expanded in 1938. A second marine hatchery, devoted to the artificial propagation of plaice, (*Pleuronectes platessa*) was built at Trondhjemsfjord in 1908. The 1883 American exhibit stimulated further European interest in hatcheries, as the Fishery Board of Scotland sent an investigator to Canada and the U.S. His glowing account of fish-cultural practices appeared in the Board's annual report. By 1893, a large hatchery was completed at Dunbar.²⁵

The American effort at quantifying the scale of fishing and creating a fledgling organization aimed at management was also being duplicated in other countries. There was enormous interest in exploring the oceans. The German Fishery Organization, created in 1870, aimed to develop national fisheries, harnessing German knowledge in marine science at the same time as the country was upgrading its navy. The *HMS Challenger* completed its famous three-year voyage in 1876, stimulating the development of the professions of marine biology and oceanography. Britain developed its first North Sea

²⁴ Ibid., 31.

²⁵ J.E. Shelbourne, *The Artificial Propagation of Marine Fish* (Re-published: Jersey City: T.F.H. Publications, Inc., 1971 ed. London: The Academic Press, 1964).

Convention to regulate fishing in 1882.²⁶ There were almost four dozen marine biological stations in Europe and the U.S. by 1900.²⁷ With the dawn of the new century, there was an increased focus on the study of the sea, and on the ability of scientists to harness technology to create more fish.

1.2 The U.S. Fish Commission

Fishing developed in New England in much the same fashion as it did in the nearby British colonies of Nova Scotia and Newfoundland. The fishermen of both nations fished in each other's waters and often sold fish to each other. While the British were taking pains to count the fish that were being landed, the U.S. took a far more casual approach. The two countries signed a reciprocity treaty in 1854, allowing Canadian fish to enter the American market without import duties. In return, American boats were allowed to harvest mackerel inside three miles off Nova Scotia. It took the Americans twelve years to realize that the duties on the imported fish were worth more than the value of the mackerel and they abrogated the treaty in 1866.²⁸ This meant that U.S. fishing rights reverted to those guaranteed under an 1818 convention that allowed Americans to use the

²⁶ Helen M. Rozwadowski, *The Sea Knows No Boundaries: A Century of Marine Science Under ICES* (Seattle: University of Washington Press, 2002), 26.

²⁷ Jennifer Hubbard, *A Science on the Scales: The Rise of Canadian Atlantic Fisheries Biology, 1898-1939* (Toronto: University of Toronto, 2006), 34.

²⁸ Raymond McFarland, *A History of the New England Fisheries* (New York: University of Pennsylvania, 1911), 325.

inshore fisheries off designated coasts. They were granted the right to land on uninhabited shores to dry nets and cure fish, and to call on all Canadian ports to obtain shelter, wood and water or make repairs.

The British were irritated at American boats operating in Canadian waters and at having to pay import duties on fish. They began seizing American boats inside three miles, for violating British territorial waters. The British drew a line from headland to headland leaving the bays and indentations closed to foreign fishermen.²⁹ In 1870, the British sought damages of \$14.8 million for the amount of mackerel the Americans had harvested in Canadian waters.³⁰ The Americans were horrified and refused to pay.

This early territorial dispute over fishing was an impetus for Congress to establish the U.S. Fish Commission in 1871. Congress authorized \$8,500 for scientific investigations, the new agency's entire budget. But the dispute with England over the fish catches soon showed that the funding and the scale of organization were insufficient.

By 1877, the British had established a three-member commission, known as the Halifax Commission, to determine the amount of damages the Americans should pay for harvesting the Canadian mackerel. Testifying for the U.S. was Spencer Fullerton Baird (1823-1887), the first director of the newly-formed U.S. Fish Commission. The British presented detailed statistics of how many mackerel the American fleet had taken, but Baird found that when he tried to compile his

²⁹ Ibid., 182.

³⁰ Dean Conrad Allard, Jr., *Spencer Fullerton Baird and the U.S. Fish Commission* (New York: Arno Press, 1978), 182.

own statistics on the catch and its value, the data were poor. The arbitrators awarded \$5.5 million to Britain, greatly shocking not only Baird, but also President Ulysses S. Grant. Baird concluded that the lack of data on the fisheries had been a decisive factor in the commission ruling. The Halifax Commission report was the first time that lack of adequate data on the fisheries hurt American interests. It would not be the last.

1.3 The Start of American Fisheries Science

Spencer Fullerton Baird was a zoologist who had made his reputation classifying species in ornithology and herpetology. He was well-connected with many of the leading scientific figures of his day, including John James Audubon, Louis Agassiz, James Dwight Dana, Joseph Henry, and George Perkins March.³¹ The Commission was not a department with broad powers, but an unaffiliated temporary agency with no regulatory function. Yet under Baird's politically astute stewardship, budgets steadily increased.

In his 1877 report to Congress, Baird argued that better science could help the nation's the fishing industry, by placing the "theory and practice of matters connected with our fisheries on a methodical and systematic basis" and

³¹ Joseph E. III Taylor, *Making Salmon: An Environmental History of the Northwest Fisheries Crisis* (Seattle: University of Washington Press, 1999), 73.

by "devising methods" through which American fisheries could be conducted with the greatest efficiency."³² The idea of making the fishing, as well as the fish themselves, more efficient, is one that would resonate through the next century.

The following year, Baird persuaded the Secretary of State to advance \$1,000 for an overall statistical digest of American fisheries. The project developed into a major undertaking. They aimed to produce a series of "historical and statistical" monographs, but the resulting report grew to five 800-page quarto volumes, along with two volumes of illustrations.³³ The report painted a portrait of the scope of American fisheries. The industry involved 131,426 individuals during 1880: 101,684 were fishermen and the rest worked on shore. The fleet consisted of 6,605 vessels, reflecting invested capital of \$37.9 million. The value of the fisheries was estimated at \$43 million, based on fish prices, "and if the average wholesale prices had been considered, the value would have been much greater." By 1882, in fact, the catches were greater and prices had increased so much that the value of the fisheries was "rather above than below the sum of \$100,000,000." The most economically viable fisheries were in the New England states, where 37,043 men, 2,066 vessels and 14,787 boats produced products

³² Dean Conrad Allard, Jr., *Spencer Fullerton Baird and the U.S. Fish Commission* (New York: Arno Press, 1978), 237.

³³ George Brown Goode, *The Fisheries and Fishery Industries of the United States – Section I: The Natural History of Useful Aquatic Animals* (Washington, D.C.: U.S. Government Publishing, 1884), V5, prefatory note.

valued at \$14.2 million. The single most valuable fishery was whaling, headquartered in New Bedford. The industry had been in decline for five decades.³⁴

The elaborate Fish Commission report was part of a broader pattern of government surveys of commerce and industry. According to historian Philip J. Pauly, such studies were “designed to provide authoritative reference points for private initiatives and public discussions, and to form baselines for future, more detailed reports.”³⁵ The U.S. Geological Survey was created in 1879, with the objective of mapping the country, especially the West. In 1883, a special committee of ornithologists began collecting detailed information on the migration of American birds, laying the foundation for the creation of the Bureau of Biological Survey in 1896.³⁶ In all these efforts, science was seen as a prerequisite for an industrial expansion and national growth.

Baird argued that in order to understand the fluctuations in the supply of commercially valuable fish, it was necessary to understand the ocean food chain. This reasoning justified the construction of the first American oceanographic fishing vessel, the *Albatross*, a 200-foot-long steamer launched in 1882 to explore the Gulf Stream for the Fish Commission and the National Museum. It

³⁴ Ibid, 140.

³⁵ Phillip J. Pauly. *Biologists and the Promise of American Life* (Princeton: Princeton University Press, 2000), 57.

³⁶ Dean Conrad Allard, Jr., *Spencer Fullerton Baird and the U.S. Fish Commission* (New York: Arno Press, 1978), 244.

also justified the construction of the Woods Hole laboratory, a processing plant for the material collected at sea and a center for more intense work on marine organisms.³⁷

In hindsight, it is clear that Baird's reports to Congress exaggerated what could be done with the *Albatross*. He suggested it could be used to find more fish so that exports to Europe could be increased, and that the ship would find so many fish off the American coast that it wouldn't be necessary to negotiate with the Canadians.³⁸ Canadian scientists made similar exaggerated claims in 1897, when they pushed for the development of the country's first marine biological station. They promised that scientific investigation of the oceans would benefit the fishing industry.³⁹ Similar promises were made in 1902, when European countries, responding to the decline in fish catches, created the International Council for the Exploration of the Seas (ICES).⁴⁰ In return for government funding, scientists promised to increase the catch from the sea. From its inception, as the state organized to study the oceans, it was done with promises from scientists that they would increase the catch.

Yet, well before any such promises were fulfilled, the importance of studying the oceans for commercial gain had become widely accepted. While the great *Challenger* expedition, and to a lesser extent the coastal voyages of the

³⁷ Phillip J. Pauly. *Biologists and the Promise of American Life* (Princeton: Princeton University Press, 2000), 57.

³⁸ Dean Conrad Allard, Jr., *Spencer Fullerton Baird and the U.S. Fish Commission* (New York: Arno Press, 1978), 304.

³⁹ Jennifer Hubbard, *A Science on the Scales: The Rise of Canadian Atlantic Fisheries Biology, 1898-1939* (Toronto: University of Toronto, 2006), 29.

⁴⁰ Helen M. Rozwadowski, *The Sea Knows No Boundaries: A Century of Marine Science Under ICES* (Seattle: University of Washington Press, 2002), 8.

Albatross, are usually explained as defining moments in the history of the development of oceanography, they also mark in a particularly explicit way how the practical interests of nations are tied to science, and how scientists have used the promise of practical gain to advance their own causes. As Chandra Mukerji has pointed out, the *Challenger* voyage came at a time when the British Empire was at its zenith and the government had vital interests in improving shipping, increasing the military advantage at sea, and locating the best routes for communications systems.⁴¹ There were also multiple objectives for the *Albatross*. It left the Atlantic in 1888 and remained in the Pacific until 1920, carrying out explorations in the Bering Sea, and west to Japan and the Philippines.⁴² The objectives included the gathering of information about maritime conditions, but the *Albatross* also signaled American interest in Japan and Southeast Asia.

1.4 The Progressive Legacy

After Baird's death in 1887, the U.S. Fish Commission was re-organized by his successor, his assistant, George Brown Goode. Goode divided the agency into four divisions, Administration, Scientific Inquiry, Statistical Inquiry, and Fish Culture. The structure remained in place after 1903, when the Fish Commission was renamed the U.S. Bureau of Fisheries and incorporated into the new U.S.

⁴¹ Chandra Mukerji, *A Fragile Power: Scientists and the State* (Princeton: Princeton University Press, 1989), 29.

⁴² Theodore Whaley Cart, "The Federal Fisheries Service, 1871-1940: Its Origins, Organization, and Accomplishments," *Marine Fisheries Review* 66, no. 4 (2004): 14.

Department of Commerce and Labor.⁴³ The Commerce Department was the result of a decade of overhaul and expansion of the government's trade promotion apparatus. There were changes at the consular service, diplomatic service, and Department of State, as well as the establishment of the new Department, with its mission to "foster, promote, and develop the foreign and domestic commerce."⁴⁴

The U.S. Bureau of Fisheries was at home in its new agency. The Bureau had worked to establish the reputation of American marine and fisheries science, not only at such international exhibitions at the London Fisheries Exhibition in 1883, but domestically as well, with popular exhibits like aquarium "grottos" displaying live fish and the hatching of eggs.⁴⁵ The Bureau benefited from new intra department relationships with the Census Office and the Bureau of Statistics, as well as the Coast and Geodetic Survey, which had been transferred from the Treasury Department to Commerce. But the Bureau retained relative independence, and the office and title of the Commission of Fish and Fisheries were specifically retained in the enabling legislation.⁴⁶

The Bureau was also at home philosophically in the Progressive ideology that permeated government at this time. It was the era of "conservation," which historian Samuel P. Hays has called an essentially scientific movement, with

⁴³ Ibid.

⁴⁴ Richard Hume Werking, "Bureaucrats, Businessmen, and Foreign Trade: The Origins of the United States Chamber of Commerce." *Business History Review*. 52 (1978): 322.

⁴⁵ Theodore Whaley Cart, "The Federal Fisheries Service, 1871-1940: Its Origins, Organization, and Accomplishments," *Marine Fisheries Review* 66, no. 4 (2004): 8.

⁴⁶ Ibid.

important consequences for the use of science and technology in modern society.⁴⁷ The essence of conservation as then understood was rational, scientific planning to promote efficient use of resources. The rapid development of science and technology appeared to offer unlimited opportunities for human achievement, visions of an abundant future, guided by scientific knowledge. “Conservationists envisaged, even though they did not realize their aims, a political system guided by the idea of efficiency and dominated by the technicians who could best determine how to achieve it,” Hays wrote in 1959.⁴⁸

The individual most identified with the Conservation movement is the man who defined it, Gifford Pinchot. Trained in scientific forestry in Germany, Pinchot took over as Chief of the Division of Forestry in the Department of Agriculture in 1898. He was a close friend of Theodore Roosevelt, who became president in 1901 after the assassination of William McKinley. Pinchot and Roosevelt believed in scientific management for maximum efficiency and minimum waste, which would protect the public interest into the future. It was Pinchot who defined conservation in an explicitly utilitarian form, echoing Jeremy Bentham and John Stewart Mill: “the greatest good to the greatest number for the longest period of time.”⁴⁹

Roosevelt’s first State of the Union address introduced conservation as the major new policy of his administration, saying: “Forest protection is not an

⁴⁷ Samuel P. Hays, *Conservation and the Gospel of Efficiency* (Cambridge: Harvard University Press, 1959), 2.

⁴⁸ *Ibid.* 3.

⁴⁹ Paul Hirt, *A Conspiracy of Optimism: Management of the National Forests since World War II* (Lincoln: University of Nebraska Press, 1994), 32.

end in itself; it is a means to increase and sustain the resources of our country and the industries which depend on them. The preservation of our forests is an imperative business necessity...Whatever destroys the forest threatens our well-being."⁵⁰ Foresters would determine that one of the threats to the forest would be old trees. To a forester interested in the sustained output of lumber, old trees were decadent and should be eliminated in favor of young trees that would grow more quickly. In 1922, regulations were adopted encouraging the removal of old trees, the start of a shift in emphasis from managing natural forests to converting them into timber plantations.⁵¹

A similar view was also applied to fish. In later years, it would become clear how wishful such thinking was, but that would take a very long time. Fishing was seen as removing older fish, creating the conditions that allowed younger fish to grow more quickly. It was assumed that if more fish hatched, that would translate into increased survival, producing more fish for harvest. Fishing paradoxically helped to produce more fish. Some scientists, such as geographer R. Malcolm Keir, writing in 1912, saw the fisheries as an exemplar because hatcheries were restoring the original abundance.

Man then is a benefit to the fish by protecting it from a host of enemies during infancy, when it is most likely to lose its life...The oyster, the cod, the shad, the salmon and the lobster, our valuable

⁵⁰ Ibid., 32.

⁵¹ Ibid., 40.

food fishes, would soon cease to exist if the work of artificial propagation and egg hatching were not carried on by the State and National Commissions.⁵²

In this view, fishing was also good for fish.

Historian Deal Allard, in his biography of Spencer Fullerton Baird, concluded that the major goal of the U.S. Fish Commission was “rational management of natural resources to promote their efficient and maximum use.”⁵³ Fisheries were not only intricately intertwined with ideology, they were also linked to politics. As environmental historian Joseph Taylor III has pointed out, the line between fisheries and politics was blurred from the very start.

American fishery management was never a pure science later fouled by politics. Political considerations have always mattered. When we look back to the mid-nineteenth century, we realize that politics, science, and technology were already hopelessly entangled by the time Congress created the USFC. Political culture had favored minimal regulation, and legislators preferred popular solutions.⁵⁴

Making more fish was obviously more appealing than restricting fishermen. The fish propagation appropriations were more than three times the amount spent on basic scientific inquiries and foreshadowed the continuing position of fish culture work as the most costly operation of the U.S. Fisheries Service.⁵⁵ As long as fish culturists could make more fish, there was no need to allocate money to enforce unpopular restrictions.

⁵² R. Malcolm Keir. “Fisheries—An Example of the Attitude toward Resources,” *Bulletin of the American Geographical Society* 44 no.8 (1912): 582-592.

⁵³ Dean Conrad Allard, Jr., *Spencer Fullerton Baird and the U.S. Fish Commission* (New York: Arno Press, 1978), 294.

⁵⁴ Joseph E. III Taylor, *Making Salmon: An Environmental History of the Northwest Fisheries Crisis* (Seattle: University of Washington Press, 1999), 96.

⁵⁵ Theodore Whaley Cart. “The Federal Fisheries Service, 1871-1940: Its Origins, Organization, and Accomplishments” *Marine Fisheries Review* 66 no. 4 (2004): 5.

1.5 Fish and Fisheries Science

The development of fisheries in the Pacific Ocean revolves around two fish: salmon and tuna. The fish inhabit separate realms in the ocean. The fish are related, but they are separated by almost 100 million years of evolution.⁵⁶

Salmon live in the cold northern waters, while tuna live in the more temperate regions of all oceans. Fish are the ultimate transnational resource, freely crossing into and out of our political boundaries, but salmon do even more, transgressing the ocean and entering the terrestrial system to spawn, lay their eggs, and die, so their carcass can furnish nutrients to the stream, preparing it for the spring when the eggs will hatch. Biologist Jim Lichatowich described salmon as “silver threads woven deep into the fabric of the Northwest ecosystem.”⁵⁷ Salmon are an important source of marine nutrients, transferred to the terrestrial system, and the links between salmon and the human communities that depend on them are deep and strong. Salmon have always been worth fighting for.

Under the Linnean system of classification of plants and animals, salmon fall into the Salmonidae family. There are two genera, Atlantic salmon (*Salmo salar*) and Pacific salmon (*Oncorhynchus*). The name “Oncorhynchus” is from the Russian term for “hooknose” and refers to the hooked upper jaw developed by males during mating.⁵⁸ The freshwater spawning grounds for salmon extend from California northward to Alaska, around the North American Arctic coast to the

⁵⁶ Keith E. Korsmeyer and Heidi Dewar. “Tuna Metabolism and Energetics” in *Tuna: Physiology, Ecology, and Evolution*, ed. E. Donald Stevens, Barbara A. Block (New York: Academic Press, 2001), 38-39.

⁵⁷ Jim Lichatowich, *Salmon Without Rivers*. (Washington, D.C.: Island Press, 1999), 6.

⁵⁸ *Ibid.* 9.

Mackenzie River, and along the Aleutian chain. On the Asian coast, they extend from the Arctic Ocean to the Amur River, Sakhalin Island and the northern parts of Japan.⁵⁹ Five species of salmon are found throughout the entire Pacific basin: pink (*O. gorbuscha*), chum (*O. keta*), sockeye (*O. nerka*), coho (*O. kisutch*), and chinook (*O. tshawytscha*). Two species are found only in Asia: masu (*O. masou*) and amago (*O. rhodurus*). Not all species of salmon are found in all watersheds. A 1972 estimate, which was considered conservative, suggested there were 10,000 stocks of salmon on both sides of the Pacific.⁶⁰

Tuna are very different. It was not until the 20th century that men developed the skills and technologies to follow tuna through the oceans. Maritime countries had always taken a few tuna in local fisheries, but they lacked the boats and fishing gear to follow the great fish as they migrated through the oceans. Tuna were dubbed wandering fish in 1757 by the Spanish cleric Fray Martin Sarmiento. “They have no Country, nor lasting Domicile,” he wrote in a report to the Duke of Medina Sidonia. “All of the Sea is their native Country. They are wandering Fish.”⁶¹ Today we call them pelagic and we know that they never stop swimming, endlessly crossing and re-crossing the temperate belts in the

⁵⁹ Peter A. Larkin. “Pacific Salmon.” *Fish Population Dynamics*. John A. Gulland, ed. (London: John Wiley & Sons,) 1977, 156-186.

⁶⁰ William E. Ricker. “Hereditary and Environmental Factors Affecting Certain Salmonid Populations.” In *The Stock Concept of Pacific Salmon*. Edited by R. Simon and P. Larkin. H.R. MacMillan Lectures in Fisheries, U.S. Bureau of Fisheries, Seattle. 1972. (Vancouver: University of Vancouver Press, 1972). 19-160.

⁶¹ James Joseph, Witold Klawe, and Pat Murphy, *Tuna and Billfish—Fish Without a Country*, (La Jolla: Inter-American Tropical Tuna Commission, 1988).

Atlantic, Pacific, and Indian oceans, where the water is warmed by the wind and waves. Over half of the world's tuna are caught in the central and western Pacific Ocean.⁶²

Tuna are very biologically advanced, with circulatory and respiratory systems that are unique among fish. The circulatory system is designed to conserve or to dissipate heat as needed. Tuna usually maintain a body temperature that is higher than the temperature of the water in which it swims. The fish have a high metabolic rate. To keep their gills oxygenated, they swim constantly.⁶³

Salmon and tuna are alike in that both can be canned. Starting in the 1880's, with the development of canning technology, salmon canneries were an important industry in all of the Pacific rim countries. It was the Japanese that brought canning technology to sea, with the development of floating canneries after 1910. While salmon can be cleaned, then easily cut into wedges to fit into cans, tuna are more complicated. The fish has to be cooked in order to easily separate the skin from the flesh. But the canning of both fish was soon automated, and both fish were valuable commodities that were traded on the world market.

Salmon and tuna are of great economic importance, but they have always been politically important as well. The foundation of international Pacific

⁶² Carl Safina, "Tuna Conservation," in *Tuna: Physiology, Ecology, and Evolution*, Donald Stevens and Barbara A. Block, eds., (New York: Academic Press, 2001), 414-457.

⁶³ James Joseph and Joseph W. Grennough, *International Management of Tuna, Porpoise, and Billfish: Biological, Legal, and Political Aspects*, (Seattle: University of Washington Press, 1979), 6.

management was laid by Canada and the United States through joint agreement to manage salmon. One of the most difficult issues when it came to signing the peace treaty with Japan in 1951 was how to divide the ocean and prevent the Japanese from catching North American fish. Tuna have also played a decisive role in the formation of modern fisheries management. The Americans developed a high-seas tuna fishery that was dependent on being able to harvest bait from near-shore waters, increasingly the waters off Mexico and Latin America. The U.S. insisted on a three-mile limit, and that the fish of the high seas were not the property of any one country. It was a cornerstone of a Cold War foreign policy that involved the U.S. Navy and its growing fleet of submarines, as well as fishing boats.

1.6 Salmon and Fisheries Biology

The development of fisheries science is thoroughly entwined with the biology of salmon. Much of what scientists have learned about fish has come from the study of the accessible salmon. This biological study has taken two forms; the study of the fish themselves in the rivers and oceans, and the study of how to make more of them in hatcheries. It is exceedingly simple to hatch their large, bright orange eggs; little more than a bucket and cold running water is required. It seemed obvious that if more eggs hatched, more smolts would survive and eventually grow to harvestable size, creating more fish to harvest.

The first and the most important fishery on the West Coast was for salmon. As early as 1823, the Hudson Bay Company, operating in the Oregon Territory, was looking for ways to salt salmon to preserve the fish long enough for shipment to market.⁶⁴ In 1864, on the Sacramento River in California, Hapgood, Hume and Company packed Chinook salmon into handmade cans, and the canned salmon industry was born. Two years later, in 1866, R.D. Hume started the first cannery on the Columbia River at Eagle Cliff, Washington, about 40 miles from the mouth of the river.⁶⁵

In the decades that followed, canneries spread across the landscape and the commercial harvest of salmon escalated rapidly. The number of operating canneries on the Columbia River peaked in 1883 at 39. That year, some 1,700 gillnet boats fished on the river, along with fish traps and fish wheels, and seine fisheries in various river basins. The fish seemed limitless at first. The pack, as it was called, peaked in 1883 at 42,799,000 pounds, and declined rapidly to 18,135,000 just six years later.⁶⁶

It was an enormously volatile time. Salmon canners could make a lot of money, or they could go out of business after a season. There were no restrictions to control the number of boats, traps, or canneries. The fish returned in great waves, over short periods of time, and much of the catch was wasted if

⁶⁴ Joseph E. III Taylor, *Making Salmon: An Environmental History of the Northwest Fisheries Crisis* (Seattle: University of Washington Press, 1999), 59.

⁶⁵ J.A. Lichatowich, L.E. Mobrand, R.J. Costello, T.S. Vogel, "A History of Frameworks Used in the Management of Columbia River Chinook Salmon," *Special Report #DE-AM79-92BP25105* prepared for the U.S. Department of Energy, Bonneville Power Administration, and the Environmental Fish and Wildlife (1996): 86.

⁶⁶ *Ibid.*, 4.

too many were caught, overwhelming the cannery's capacity. When it came to early fishing for salmon, as with other American natural resources, as historian William Cronon has written, "the people of plenty were a people of waste."⁶⁷

By the 1890s, the industry was severely over-capitalized, with too many canneries competing for a dwindling supply of fish. There was a wave of consolidations, starting with the creation of the Columbia River Packers Association in 1887, combining the resources of nine independent firms. The Alaska Packing Association was formed in 1892, a profit-sharing organization with 31 canneries, of which nine continued to operate after the others closed. The cannery owners, most of them headquartered in San Francisco, were given shares of the profits in proportion to their respective packs in the previous year.⁶⁸ The B.C. Packers Association was formed in 1901, involving 29 of 48 plants on the Fraser River and twelve on the waters of northern British Columbia.

The declining salmon runs seemed to demand a response. In 1872, Spencer Fullerton Baird sent Livingston Stone to California, armed with a \$5,000 Congressional appropriation to find a source of salmon eggs. Stone built the West Coast's first hatchery at the confluence of the McCloud and Pitt Rivers in northern California. The U.S. Fish Commission then began shipping salmon eggs to eastern rivers, in specially designed rail cars, while the return trip often carried Eastern fish eggs to the West. Stone oversaw the transfer of an estimated 30

⁶⁷ William Cronon, *Changes in the Land: Indians, Colonists, and the Ecology of New England* (New York: Hill & Wang, 1984), 170.

⁶⁸ Homer E. and Kathleen Barnes Gregory, *North Pacific Fisheries* (San Francisco and New York: American Council, Institute of Pacific Relations, 1939), 93.

million salmon eggs to the Eastern U.S., and to New Zealand, Holland, Hawaii, Russia, Denmark, Germany, France, and Australia.⁶⁹ Baird sent Stone to the Columbia River in 1877, to help a group of investors build a hatchery on Oregon's Clackamas River. Stone explicitly followed the prevailing utilitarian philosophy in an 1884 address to the American Fish Cultural Association, in which he implied that the fish commission was improving on nature:

Nature, perhaps more aptly speaking, Providence, in the case of fish...produces great quantities of seed that nature does not utilize or need. It looks like a vast store that has been provided by nature, to hold in reserve against a time when the increased population of the earth should need it and the sagacity of man should utilize it. At all events nature has never utilized this reserve and man finds it here to meet his wants.⁷⁰

Three years after the McCloud Hatchery opened, and before the first chinook could possibly have returned, Baird declared the hatchery a success.⁷¹ In doing so, he established a pattern that would repeat itself throughout the history of fisheries management: of scientists declaring success without actually demonstrating it.

⁶⁹ J.A. Lichatowich, L.E. Mobrand, R.J. Costello, T.S. Vogel, "A History of Frameworks Used in the Management of Columbia River Chinook Salmon" *Special Report #DE-AM79-92BP25105* prepared for: U.S. Department of Energy, Bonneville Power Administration, Environmental Fish and Wildlife (1996): 124.

⁷⁰ Livingstone Stone, "The Artificial Propagation of Salmon in the Columbia River Basin," *Transactions of the American Fish-Cultural Association* 13 (1884): 21-31.

⁷¹ J.A. Lichatowich, L.E. Mobrand, R.J. Costello, T.S. Vogel, "A History of Frameworks Used in the Management of Columbia River Chinook Salmon" *Special Report #DE-AM79-92BP25105* prepared for: U.S. Department of Energy, Bonneville Power Administration, Environmental Fish and Wildlife (1996), 12.

1.7 The Alaskan Fishing Industry

West Coast fisheries were operated on an industrial scale very soon after their development. This is especially true of Alaska. As early as the 1890s, there was recognition that Alaskan salmon runs, as vast as they were, could be declining. A prohibition on the use of barriers in steams was enacted in 1889, but there were only two U.S. Treasury agents stationed in the territory for enforcement. An act in 1896 prohibited fishing in the mouths of several salmon streams, but the Treasury officers did not even have their own vessel to move among the canneries.⁷² The U.S. Fish Commission recommended in 1892 that hatcheries were the solution to salmon problems in Alaska. Congress established regulations in 1900, requiring canneries to establish suitable hatcheries and to allow a percentage of the sockeye run to spawn.⁷³ But even when regulations were created, they were weakly enforced.

The newly re-organized U.S. Fish Commission assumed responsibility for the Alaskan fisheries from the Treasury Department in 1903. The Commission established fishery regulations, usually specifying the number of days when fishing could be conducted in each region. But Congress only funded a single inspector and an assistant to enforce the regulations. There was no money to transport the inspector from to and from canneries, leading to virtually no inspections or enforcement. The flavor of the job comes through in the 1896 report by Alaska Governor John Green Brady:

⁷² Ibid., 28.

⁷³ Ibid., 75.

Now, there are 4,735 miles an agent must travel to reach the different canneries. But that is only half the story, for each cannery is supplied with fish from a number of streams, some of them more than 150 miles from the place of packing...An agent is appointed...told to proceed to Alaska...and finding a folder of the Pacific Coast Steamship Company wrestles with the Alaska route until he believes he understands it. Finally he arrives at Sitka...He inquired how far is the nearest cannery, and how can he get there. It is forty miles, and there is no regular boat running there. The only way to get there is to hire a canoe or wait until the cannery steamer, The *Wigwam*, happens to pass by. There is no boat of any kind belonging to the fish inspector, nor has the collector a boat he can loan; so all he can do is wait and take the mail steamer for *Karluk*, seven hundred miles west of Sitka. When he reaches there the cannery people show him every courtesy and see that he has a boat to get around in. Can anything be more humiliating to a government officer appointed to carry out this important duty?⁷⁴

The Bureau's budget increased from \$26,700 in 1900 to \$36,000 in 1901, but most of the money was still going to fish rearing projects.⁷⁵ Congress voted to establish two hatcheries in Alaska in 1903, but little additional money went to the territory.⁷⁶ Until 1910, only one agent and an assistant, based in Washington, D.C., would travel to Alaska each year to supervise the fishery. The Bureau created an Alaskan Division in 1911.⁷⁷ When the Alaska Organic Act was passed in 1912, providing limited self-government, a provision specifically prohibited the new territorial government from passing laws to amend or repeal federal control

⁷⁴ Ernest Gruening, *The State of Alaska* (New York: Random House, 1968), 248.

⁷⁵ Theodore Whaley Cart, "The Federal Fisheries Service, 1871-1940: Its Origins, Organization, and Accomplishments," *Marine Fisheries Review* 66, no. 4 (2004): 21.

⁷⁶ J. Richard Dunn, "Charles Henry Gilbert (1858-1928): An Early Fishery Biologist and His Contributions to Knowledge of Pacific Salmon (*Oncorhynchus* spp.)" *Reviews in Fishery Science* 4, no. 2 (1996): 149.

⁷⁷ Theodore Whaley Cart, "The Federal Fisheries Service, 1871-1940: Its Origins, Organization, and Accomplishments," *Marine Fisheries Review* 66, no. 4 (2004): 7.

of the fisheries.⁷⁸ The number of inspectors was increased to four men in 1913, but the effort was negligible in terms of the scale of the industry. Between 1906 and 1915, Congress spent \$4,564 on Alaskan fisheries enforcement, less than \$500 a year. The budget shrank again during the Depression, when Congress allocated \$16,500 for biological investigations in Alaska, when the agency had estimated at least \$115,000 was needed.⁷⁹

This lack of federal presence was perhaps a concession, in that fisheries were a primary front in the struggle between the small resident Alaskan population and control by outside interests, especially those based in Seattle. Salmon was the most important sector of the Alaskan economy until World War II. By 1900 the pack was more than two million cases valued at nearly \$10 million.⁸⁰ Congress adopted legislation in 1906 that permitted the territory to tax salmon at a fixed value per case, starting at four cents. The canners organized to hire a permanent legal staff in Washington D.C. to represent them, and lobby against tax increases. The Association of Alaska Salmon Canners was formed in 1912 to work with the Puget Sound Salmon Canners Association and unsuccessfully challenge the tax in court.⁸¹ The political and economic links between the industry and federal representatives were strong.

⁷⁸ Richard A. Cooley, *Politics and Conservation: The Decline of the Alaska Salmon* (New York: The Conservation Foundation, 1963). p. xvii.

⁷⁹ *Ibid.*, 85.

⁸⁰ Stephen Haycox, *Alaska, an American Colony* (Seattle: University of Washington Press, 2002), 241.

⁸¹ Richard A. Cooley, *Politics and Conservation: The Decline of the Alaska Salmon* (New York: The Conservation Foundation, 1963), 91.

The canners lobbied hard against taxes on canned salmon, but they also lobbied hard against shifting any taxing or enforcement authority to the territorial government. “The Bureau of Commercial Fisheries, which was in charge of investigations and regulations, made common cause with the canners in the face of efforts by the territorial government to restrict fishing,” wrote Ernest Gruening (1887-1974), who was appointed Alaska territorial governor by President Franklin Roosevelt in 1939.⁸² This early triangulation of power, with the federal government supporting the fishing industry in its attempts to avoid regulation, was repeated in California during the 1930s, as the State Fish and Game Commission recommended harvest restrictions on sardines. The powerful canners were supported by the federal biologists, who opposed restricting the catch.⁸³

Congress periodically held hearings on the Alaskan fisheries, to hear complaints from residents about the lack of enforcement. The hearings were generally in Washington, D.C., where the active lobbying of the canning industry, backed by congressional representatives and senators (especially representatives from Washington and Oregon), made restrictions difficult to pass. When they were passed, there was little money spent on enforcement. Congress found it impossible to police the number of fish traps, and how they were operated. While resident fishermen and Native representatives warned of the dangers of depleting the runs, the canneries prevented Congress from acting to

⁸² Ernest Gruening, *The State of Alaska* (New York: Random House, 1968), 260.

⁸³ Arthur F. McEvoy. *The Fisherman's Problem: Ecology and Law in the California Fisheries*, (Cambridge: Cambridge University Press, 1986).

provide more enforcement. The cannery argued that if the traps were banned, it would be unprofitable for them to operate in Alaska. Three-quarters of the territorial revenue came from the tax on cases of packed salmon, and the cannery bitterly fought any tax increases and operating restrictions.⁸⁴

1.8 Fisheries Science in the West

When the U.S. Fish Commission began its massive study of the fisheries of the United States in the 1880s, Spencer Fullerton Baird hired David Starr Jordan to survey the Pacific coast fisheries.⁸⁵ Jordan (1851-1931) is a towering figure in early modern science. He was a pioneering ichthyologist who published extensively on fish taxonomy throughout the Pacific. He spent most of his academic career at Illinois University, until he moved to Stanford University in 1891, where he served as president. Jordan was also a noted educator, advocate of evolutionary theory, and a peace activist.⁸⁶

One of his most influential students was Charles H. Gilbert (1859-1928), who received his doctorate in 1883 at Indiana University, majoring in zoology. When Jordan moved from Indiana University to Stanford in 1891, one of his first appointments was to make Gilbert chairman of the Zoology Department. One of Gilbert's students, Willis Rich, described Gilbert as the first fishery biologist in the

⁸⁴ Stephen Haycox, *Alaska, an American Colony* (Seattle: University of Washington Press, 2002), 243.

⁸⁵ Theodore Pietsch and J. Richard Dunn, "Early Collection Building in Puget Sound and Adjacent Waters," in *Collection Building in Ichthyology and Herpetology*, (Lawrence, KA.: American Society of Ichthyologists and Herpetologists, 1997), 279.

⁸⁶ David Magnus, "In Defense of Natural History: David Starr Jordan and the Role of Isolation in Evolution" (PhD Dissertation., Stanford University, 1993).

United States. J. Richard Dunn, a biologist who has written extensively about the development of early American fishery biology, called Gilbert the “intellectual founder of what we now consider fishery biology in this country.”⁸⁷

Gilbert’s career was heavily intertwined with development of the salmon industry. He began studying salmon in 1880, as part of the survey of Pacific fisheries for the U.S Fish Commission’s massive study. When the Commission’s research vessel, the *Albatross*, cruised from the Gulf of California to southeast Alaska in 1888, Gilbert was on board. The following year, in 1889, Congress voted to investigate the habits, abundance, and distribution of Alaskan salmon, as well as the extent of the fishery. However, it did not allocate the money to pay for the study.⁸⁸

It took until 1897, as the number of canneries in Alaska mushroomed, for a systematic investigation of the salmon streams of Alaska to begin. The commercial salmon catch had grown from 2000 cases in 1864 to a peak of over 5.3 million cases in 1909. The pack on the Sacramento and Columbia rivers had declined by 1905, but the Alaskan catch grew significantly after about 1895.⁸⁹ Salmon catches fluctuated greatly. The most valuable fish was the sockeye, and every four years there was a dominant run, much stronger than the preceding three years. The fluctuation was known, but it was not known why this

⁸⁷ J. Richard Dunn, “Charles Henry Gilbert (1858-1928): An Early Fishery Biologist and His Contributions to Knowledge of Pacific Salmon (*Oncorhynchus spp.*)” *Reviews in Fishery Science* 4, no. 2 (1996): 136.

⁸⁸ Patricia Roppel. “The Steamer *Albatross* and Early Pacific Salmon, *Oncorhynchus Ssp.*, Research in Alaska.” *Commercial Fisheries Review* 66, no. 3 (2004): 24.

⁸⁹ J. Richard Dunn, “Charles Henry Gilbert (1858-1928): An Early Fishery Biologist and His Contributions to Knowledge of Pacific Salmon (*Oncorhynchus spp.*)” *Reviews in Fishery Science* 4, no. 2 (1996): 140.

happened. The uncertainty of the catch, when salmon canners had to load everything they estimated they would need for the season onto a ship that would set sail for Alaska to fish for a few weeks, added to the volatility of the fishing industry. Packing too many materials in a year of poor fishing could drive a company out of business, as could not packing enough supplies during a large dominant run.

Very little was known about Pacific salmon. It was a popular belief that the apparent cause of the decline of salmon runs was the failure of many of the eggs to hatch, and predation on the young that did emerge from the spawning beds. Hatcheries were strongly supported by the canning industry and by *Pacific Fisherman*, the Seattle trade journal owned by Miller Freeman.⁹⁰ Even David Starr Jordan believed that hatcheries were effective. “To keep the streams stocked the United States government must maintain hatcheries, and in his report to the president and Congress he will recommend the establishment of three hatcheries in Alaska,” reported *Pacific Fisherman* in a 1903 interview.⁹¹

Jordan also agreed with many that predation on young salmon was a major factor in salmon mortality. He pointed to Dolly Varden (*Salvelinus malma*) as a major culprit and in 1907 recommended that Alaska withdraw any protective laws, because the trout “destroys enormous numbers of salmon fry.”⁹² He also thought that salmon went into the ocean and roamed between twenty

⁹⁰ Ibid., 149.

⁹¹ J. Richard Dunn, “Charles Henry Gilbert (1858-1928): An Early Fishery Biologist and His Contributions to Knowledge of Pacific Salmon (*Oncorhynchus spp.*)” *Reviews in Fishery Science* 4, no. 2 (1996): 149.

⁹² Ibid., 150.

and forty miles from shore, then entered whatever river or stream was convenient when it was time for them to spawn. Gilbert, who was appointed Scientist-in-Charge of all Pacific Coast fishery studies by the U.S. Bureau of Fisheries in 1909, thought salmon returned to their natal streams.

In 1912, the Province of British Columbia, concerned about the decline in its salmon stocks, hired Gilbert to mount an investigation of the province's most important fishery. Gilbert produced a 1913 report that laid out a basic understanding of the Fraser River sockeye run, based on an analysis of scales taken from the returning fish. Through a painstaking analysis of the scales from individual fish, Gilbert ascertained the age of the fish in various years, and the differences in racial characteristics between the fish of the Fraser and the Skagit rivers. "Any ten Skagit River sockeyes of the 1913 run taken at random could be distinguished from any ten Fraser River fish of the same year by the scale structure, and by the widely differing proportions of the age-groups represented in the two runs."⁹³ And Gilbert concluded that it could be "affirmed with entire confidence" that salmon returned to the streams where they had been hatched, to interbreed within their colony. In 1914, Gilbert confirmed the home stream theory, asserting that each stream had a distinctive race of salmon, and that feeding at sea was the most important factor in producing early maturity.⁹⁴ His assertions would not be accepted for another 20 years, after additional work by his student, Willis Rich.

⁹³ Ibid., 153.

⁹⁴ Ibid., 156.

Despite the little that was known about salmon biologically, early fish culturists were certain that improving the survival rate by hatching more eggs and providing early incubation would result in more fish.

1.9 Reaching Maximum Productivity?

Scientists from Huxley to Baird, Goode to Jordan, had optimistically believed in the inexhaustibility of fishes and the efficacy of hatcheries. But signs of dissent were emerging. In September of 1919, Gilbert, now working as a special assistant to the U.S. Bureau of Fisheries, and his field assistant, Henry O'Malley, wrote a special report on their investigation of the salmon fishery in Central and Western Alaska. They had spent the summer surveying salmon in the Copper Inlet, Cook Inlet, Bristol Bay, Ikatan and King Cove, the Karlak River and Kodiak, the most important fishing districts in Alaska, home to the most important species of salmon, the sockeye or reds. The 1918 catch, some 6.6 million cases of fish, had been worth a staggering \$51 million. But the 1919 catch had been alarmingly low throughout the region, raising a troubling question: had the fishery been developed to maximum productivity?⁹⁵ After writing their report to the U.S. Bureau of Fisheries, the two scientists labored over the letter of transmittal, penning a forceful and unequivocal statement that the fish had been overharvested:

⁹⁵ Willis H. Rich and Edward M. Ball. "Statistical Review of the Alaska Salmon Fisheries. Part 1, Bristol Bay and the Alaska Peninsula." *Bulletin of the U.S. Bureau of Fisheries*, 44 (1928): 41.

The industry has now reached a critical period, in which the salmon supply of Alaska is threatened with virtual extinction, unless a radically new administrative policy be substituted for the one now in force.⁹⁶

The scientists were especially concerned that the salmon fisheries of Puget Sound had also collapsed, prompting the canneries to move their equipment to Alaska, creating more pressure on fish that were already heavily harvested. “Unless effective government control can be secured to prevent further invasion of a district which already suffers the evil results of unrestricted competition, certain disaster will befall the salmon fisheries of Alaska.”⁹⁷ The year was 1919.

By the 1920s, there was mounting evidence that fisheries on the entire West Coast were in drastic decline. Alaskan and Puget Sound salmon catches hit record lows, and so did the great runs on the Columbia River.⁹⁸ The declines were not only in salmon. After the collapse of the Atlantic halibut fishery in the 1880s, a Pacific halibut fishery had begun. By 1910, the catch rate and average size of the fish had declined so seriously that Canada and the U.S. began negotiations on a formal agreement to control the fishery.⁹⁹

In California, sardine production had been 75,000 cases in 1915.

Stimulated by the demands of World War I, it soared to 1.4 million cases, making

⁹⁶ Charles H. Gilbert and Henry O'Malley, “Special Investigation of Salmon Fishery in Central and Western Alaska,” *U.S. Bureau of Fisheries Document 891*. Alaska Fisheries and Fur Industries, 1919, 143-160.

⁹⁷ *Ibid.*, 143.

⁹⁸ J.A. Lichatowich, L.E. Mobrand, R.J. Costello, T.S. Vogel, “A History of Frameworks Used in the Management of Columbia River Chinook Salmon” *Special Report #DE-AM79-92BP25105* prepared for: U.S. Department of Energy, Bonneville Power Administration, Environmental Fish and Wildlife (1996): 182.

⁹⁹ Tim Smith, *Scaling Fisheries: The Science of Measuring the Effects of Fishing, 1855-1955* (Cambridge: Cambridge University Press, 1994), 203.

sardines the largest commercial fishery in the United States.¹⁰⁰ Then catches began to fluctuate dramatically: had the sardines been overfished, too? Even California tuna fishermen, who had seen their industry slowly grow to catching 22 million pounds a year by 1925, had problems. The spring of 1926, fishermen couldn't find albacore in the waters off San Diego. The boats had to search to the south, off Mexico, to find the fish.

It was difficult to interpret the relationship between the number of fish harvested and the total population. Catches rose one year, then fell the next. Sometimes, overall catches stayed high, but there had been an enormously significant shift in the composition of the salmon catch. The Alaska canneries in the 1880s canned only sockeye, while the Columbia and Sacramento canned only chinook. As the sockeye and chinook runs began to decline, the canners shifted to lower-value species, coho, chums, and pinks. The annual pack numbers were still high, but more fishermen were chasing the fish and there was more gear in the water. Each fisherman was catching fewer fish, but all of the species of salmon in a river or stream were being systematically exploited. While biologists such as Gilbert were concerned, there was general confidence that hatcheries would replace the fish that were caught.

Gilbert and O'Malley speculated that the increase in the size of the fluctuations may have indicated that the Bristol Bay fishery had been developed

¹⁰⁰ Tom Mangelsdorf, *A History of Steinbeck's Cannery Row* (Santa Cruz: Western Tanager Press, 1986), 26.

to the danger point, or that depletion had already occurred. In other words, the runs might have been overfished. For the two biologists, the pattern was clear:

Other river basins have been watched during the progress of depletion. The sequence of events is always the same. Decreased production is (accompanied) by an increase in gear. Fluctuations in the seasons becomes more pronounced. Good seasons still appear in which nearly maximum packs are made. But the poor seasons become more numerous. When poor seasons appear, no attempt is made to compensate by fishing less closely. On the contrary, efforts are redoubled to put up the full pack. The poorer seasons strike consistently lower levels, until it is apparent to all that serious depletion has occurred.¹⁰¹

In 1883, T.H. Huxley had confidently declared the great sea fisheries were inexhaustible. The fecundity of the ocean was so great, and fish produced so many eggs, that the human toll of fishing was negligible compared to that of other fish and natural events. Armed with that confident opinion, Americans had set out to improve on nature, hatching fish eggs in the controlled environment of hatcheries. Spencer Fullerton Baird had not waited for the first salmon to return to the Columbia before he declared the hatchery program successful. But the reality was different from the rhetoric: the great salmon catches were starting to falter.

¹⁰¹ Charles H. Gilbert and Henry O'Malley, "Special Investigation of Salmon Fishery in Central and Western Alaska," *U.S. Bureau of Fisheries Document 891*. Alaska Fisheries and Fur Industries, 1919.

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Chapter Two

Rising Technology, Falling Catches

Salmon fishing is, and long has been, political; it is ideological. It is about staking a defensible social claim to a share of the catch and calling that claim a defense of nature: the fewer the fish, the more intense the fight.

Richard White, *The Organic Machine: The Remaking of the Columbia River*¹

What is remembered about T. H. Huxley's address at the 1883 London Fisheries Exhibition is that he thought the great sea fisheries would never exhaust the fish of the sea. But Huxley added an important qualification: that he would leave it to others to study the impacts of steam engines on fishing. Surely it must have been clear to him that the impact would be substantial. In fact, it transformed fishing, first by hugely increasing the ability to harvest, and second by transforming fishing from the vocation of individuals to the business of major multi-national corporations. As technology allowed boats to fish further from home, fishing also became a claim of ownership for governments, and foreign policy considerations increasingly affected government policies towards fishing. The development of a fishery asserted a territorial claim that governments were loathe to discard.

¹ Richard White, *The Organic Machine: The Remaking of the Columbia River* (New York: Hill and Wang, 1995), 91.

The world of fishing, in which Huxley had grown up and closely observed, was a world where fishermen had only their bodies to haul heavy, wet nets from the sea. They relied on sails to maneuver and they had no technology to help them find the fish in the sea. It was a hard and dangerous life and it did not pay well. Sailing boats were limited to trawling in 100 meters, but steam boats could fish in 400 meters, catching eight times what a sailing smack could in the same amount of time.² As journalist Mark Kurlansky has observed, "Once motor ships replaced sail and oar, fishing no longer had to be done with "passive gear"--equipment that waited for the fish. Fish could now be pursued. And since a bigger, more powerful engine could always be developed, the scale of the fishing could increase almost limitlessly."³ While the sailing trawlers of mid-eighteenth century must be considered active, rather than passive fishing gear, Kurlansky's point is well-taken: that technology offered fishermen much more control over finding and catching more fish.

In Britain, the use of steam engines in fishing boats was part of a broader rise of industrial capitalism. The prevailing economic theory was that fishing, like other craft industries, needed to become more efficient to reduce costs and increase catches. The development of new fishing grounds was encouraged to alleviate complaints about new, more efficient gear depleting the local stocks.⁴

² Dietrich Sahrhage and Johannes Lundbeck, *A History of Fishing* (Berlin: Springer-Verlag Berlin Heidelberg, 1992), 112.

³ Mark Kurlansky, *Cod: A Biography of the Fish That Changed the World* (New York: Walker and Company, 1997), 132.

⁴ Daniel Pauly and Jay Maclean, *In a Perfect Ocean: The State of Fisheries and Ecosystems in the North Atlantic Ocean* (Washington, D.C.: Island Press, 2003), 15.

There was a ready market for cheap fish, thanks to the development of the British rail system, which made it possible to ship fresh fish to the larger markets in the cities. “Without the service provided by the railways, fresh fish would simply not have become such an important part of the national working-class diet in the late nineteenth century,” writes historian Robb Robinson in his account of the rise and fall of the British trawl fishery.⁵

James Watt had constructed the first serviceable steam engines in 1769 but it took almost a hundred years until they were applied to fishing vessels. Development began around 1860, with steam used to haul nets and long lines of baited hooks.⁶ Steam cutters were far more efficient than sailing boats, but they required considerable capital outlay and fishing had to occur year-round to sustain them.⁷ Almost as soon as steam trawlers were introduced, there were complaints from traditional fishermen of falling catches. There were so many complaints that Britain established a Royal Commission in 1885 to investigate. The Commission conceded that trawling in inshore waters could affect fish stocks. The report included the first scientific study of the fishery, by Professor Mackintosh of St. Andrew’s University, who was reportedly burned in effigy by the fishermen of his home town, for concluding that fishing harmed fish stocks.⁸ The Commission recommended setting up a process to keep fisheries statistics,

⁵ Robb Robinson, *Trawling: The Rise and Fall of the British Trawl Fishery* (Exeter: University of Exeter Press, 1996), 33.

⁶ Dietrich Sahrhage and Johannes Lundbeck, *A History of Fishing* (Berlin: Springer-Verlag Berlin Heidelberg, 1992), 103.

⁷ Robb Robinson, *Trawling: The Rise and Fall of the British Trawl Fishery* (Exeter: University of Exeter Press, 1996), 72.

⁸ *Ibid.*, 101.

a recommendation the government implemented. The statistics for the 1890s showed that as the number of North Sea trawlers increased, each boat caught fewer fish. In 1889, 2,859 boats had caught 173,810 tons of fish, or 60.6 tons per unit. By 1898, there were 7,143 fishing units catching 230,656 tons of fish, but each unit took only 32.3 tons each.⁹ More fish were being caught, but at greater individual cost by the fishermen.

The steam trawlers soon needed to find new water and new stocks to fish. The first British boats went to Iceland in the summer of 1891. This was the extreme range of steam trawlers, and they could only make the journey in the summer, since the winter fogs were too hazardous and the boats were not large and powerful enough to make such long winter journeys. Coal was stored in the bunker and fish room for the outward journey, and in all other spaces on the boat.¹⁰ Where the trawlers fished, complaints followed.¹¹ But under international law, Iceland only controlled the first three miles of territory off her coast. The fish of the high seas became the property of whatever nation caught them. Iceland began to try to control foreign fishing as early as 1889, passing an act to prohibit trawling in its territorial waters—although it did not attempt to define its territorial

⁹ Robb Robinson, *Trawling: The Rise and Fall of the British Trawl Fishery* (Exeter: University of Exeter Press, 1996), 111.

¹⁰ *Ibid.*, 105.

¹¹ Jon Th. Thor, *British Trawlers in Icelandic Waters: History of British Steam Trawling off Iceland, 1889-1916, and the Anglo-Icelandic Fisheries Dispute, 1896-1897*, trans. Hilmar Foss (Reykjavik: Fjölvi Publishers, 1992), 33.

waters.¹² Iceland's Jon Th. Thor called British fishing off his country an example of imperialism, writing emotionally:

The trawlerman sailed hither equipped with the most modern fishing gear known at that time and were backed by the most powerful naval force in the world. On the coast of Iceland they met people who for all practical purposes were in great contrast to themselves, people who hardly kept alive under the most primitive conditions, many surviving near starvation-limits and still remaining at stage of industry befitting the Middle Ages. Off their coast these people possessed some of the world's richest fishing grounds, but they had neither the funds nor the equipment to utilize them.¹³

Throughout the globe, as fishing intensified, catches began to fall, first in the North Sea grounds, then in Iceland, where boats were now fishing year-round, despite the dense fogs and unpredictable North Atlantic winter weather. British boats first went to the Barents Sea in 1905. Even though it took five days to steam there, the much higher catches made it worthwhile. By the start of World War I, British steam trawlers were making regular trips to the Grand Banks of Newfoundland and the coast of Greenland.

The falling catch prompted a series of questions. European research during the 1890s concentrated on the impact of catching small, immature fish. If the young fish could be protected by a "biological size limit," so they could spawn before they were caught, would that increase the potential catch in the future? And how could it be accomplished?¹⁴ These questions led to

¹² Robb Robinson, *Trawling: The Rise and Fall of the British Trawl Fishery* (Exeter: University of Exeter Press, 1996), 108.

¹³ Jon Th. Thor, *British Trawlers in Icelandic Waters: History of British Steam Trawling off Iceland, 1889-1916, and the Anglo-Icelandic Fisheries Dispute, 1896-1897*, trans. Hilmar Foss (Reykjavik: Fjölvi Publishers, 1992), 235.

¹⁴ Tim Smith, *Scaling Fisheries: The Science of Measuring the Effects of Fishing, 1855-1955* (Cambridge: Cambridge University Press, 1994), 117.

the formation of the International Council for the Exploration of the Seas (ICES), established in Copenhagen in 1902. ICES began as a temporary structure to conduct a five-year program of hydrographic and biological investigation of the Northern European seas. Historian Helen Rozwadowski writes that its founders were inspired by turn of the century internationalism and the idea that collaboration across national boundaries would produce more knowledge than a single nation working alone.¹⁵ The objective was to use science to increase catches. The scientific organization was a necessary first step to begin the thorny process of starting to regulate an enormously volatile and powerful industry.

2.1 The Bering Sea Ecosystem

Environmental historian Donald Worster attributes to Americans a view of nature as a vast warehouse, full of commodities that can be used to generate wealth. In such a view, the function of the social system is to facilitate the transformation of commodities into wealth.¹⁶ One of the largest and most important warehouses of commodities in the world is the North Pacific Ocean. The Bering Strait, just 55 miles wide, separates the continents of Asia and North America. Four great seas rim the two continents, the Gulf of Alaska, the Bering Sea, the Sea of Okhotsk, and the Sea of Japan. The Bering Sea alone covers

¹⁵ Helen M. Rozwadowski, *The Sea Knows No Boundaries: A Century of Marine Science Under ICES* (Seattle: University of Washington Press, 2002).

¹⁶ Donald Worster, *Dust Bowl: The Southern Plains in the 1930s* (New York: Oxford University Press, 1979), 6.

more than two million square miles and is home to 450 species of fish, 50 species of seabirds and 25 species of marine mammals. It contains the world's largest fishery, for walleye pollock (*Theragra chalcogramma*), and Bristol Bay, the world's largest sockeye salmon fishery. Much of the Bering Sea and rest of the North Pacific is covered with sea ice for several months of the year, a winter platform for seals and walrus, and providing the habitat for extensive marine plant growth. A spectacular phytoplankton bloom occurs as the ice edge retreats each spring.¹⁷ The phytoplankton bloom sustains fish populations and the marine birds and marine mammals that depend on them. Part of the richness of the Bering Sea ecosystem is this variety and complexity of life.

From the standpoint of fish, the most defining element of the North Pacific, especially in the Bering Sea, is the wide, shallow continental shelf. Edges of it can be found along Kamchatka, Siberia, Sakhalin, Hokkaido, Honshu, and East Korea, and constitute major fishing areas.¹⁸ There are two water masses. The sub-arctic waters are characterized by low temperatures of 2-5 degrees Centigrade and low salinity at the surface. The sub-arctic water mass is carried eastward, and is rich in nutrients with a high standing crop of phytoplankton and zooplankton during spring and autumn. The central water mass is larger, with

¹⁷ Vera Alexander, "Why is the Bering Sea Important?"
http://www.beringclimate.noaa.gov/essays_alexander.html

¹⁸ Hiroshi Kasahara, *Fisheries Resources of the North Pacific Ocean* (Vancouver, B.C.: University of British Columbia, Institute of Fisheries, 1961), 4.

high temperatures and salinity, and is relatively low in nutrients and plankton.¹⁹ A complex web of currents bring the two water masses together, creating upwelling that further stimulate the food web.

One of the most productive regions in the entire North Pacific Basin is Bristol Bay in the Western Bering Sea. It is protected to the south by the Aleutian Peninsula, which trails into the Aleutian Islands. It is home to one of the richest populations of fish in the world, sockeye salmon. It brings the highest price of all the five salmon species, and it is the most abundant salmon on the North American side of the Pacific. The largest populations are found in the streams entering Bristol Bay, as well as the Skeena and Fraser Rivers in British Columbia. There are sockeye on the Asian side as well, most of them in the Kamchatka peninsula, with a few populations on the northern coast of the Okhotsk Sea on the northern coast of the Bering Sea.²⁰ By 1919, there was already evidence that the great runs could be in decline.

2.2 The Halibut Fishery, 1880-1920

Salmon was the largest fishery in the Pacific Northwest by the turn of the century, but it was not the only important commercial fishery, and it was not the only one showing sign that too many fish were being taken. Indeed, the development of the Pacific halibut fishery shows how quickly a fishery could begin to exhibit signs of overfishing.

¹⁹ Ibid., 6.

²⁰ C. Groot and L. Margolis, *Pacific Salmon: Life Histories* (Vancouver: University of British Columbia Press, 1991).3.

Pacific halibut (*Hippoglossus stenolepis*) are among the largest fish in the sea. Most are between twenty-five and thirty-five pounds, but they can grow much larger, and the historical record is full of landings of fish weighing several hundred pounds. Halibut are found on the Continental Shelf of the North Pacific Ocean and the Bering Sea, from mid-California to Alaska, and west along the Asiatic coast, from Russia to Hokkaido. The largest concentrations are on the northwest coast of North America, in the international waters between Canada and the United States.²¹

Two developments stimulated the establishment of the Pacific halibut fishery. Atlantic halibut stocks had collapsed in 1880s, creating a market for Pacific halibut, but it took the completion of the transnational railroads to bring the fish to eastern consumers. The expansion of ice facilities in the 1890s and early 1900s provided ice, frozen bait, and space for the fish to be held before being shipped by rail to eastern markets.²² By 1895, the halibut fishermen in Gloucester were complaining about competition from the West.

The most important halibut port was Seattle, the staging ground for the development of the Alaskan grounds after 1900. Early halibut fishing was by large vessels called steamers, financed by fish companies. Each carried between eight to fourteen dories.²³ The steamers could deploy large amounts of gear

²¹ John Thistle. "As Free of Fish as a Billiard Ball is of Hair": Dealing with Depletion in the Pacific Halibut Fishery, 1899-1924." *B.C. Studies*. Summer/Autumn, no. 142/143, (2004): 107.

²² D.H. Cushing, *The Provident Sea* (Cambridge: Cambridge University Press, 1988), 128.

²³ Frederick Heward Bell, *The Pacific Halibut: The Resource and the Fishery* (Anchorage: Alaska Northwest Publishing Company, 1981), 28.

where there were heavy concentrations of fish, and they were large enough to maneuver in winter seas, since halibut fetched its best price in the eastern markets during winter months.

The fishery developed quickly. Between 1902 and 1909, fishermen found halibut in 80 meters of water throughout the year. Between 1910 and 1915, the average depth of capture was more than 160 meters and as great as 260 meters. Gas engines were being introduced into the fishery. By 1900, as concerns grew about the pelagic harvest of fur seals (*Callorhinus ursinus*), sealers began moving into the halibut fishery.²⁴ After 1915, boats installed 16 V generating systems, allowing deck lights and night fishing. Power-driven winches allowed small dories to be hauled on board the schooners by power, and holds were insulated, so the boats could stay at sea longer. Diesel engines were introduced by 1921.

The signs that too many halibut might be harvested appeared early. In 1899, Richard Rathbun, an ichthyologist with the U.S. Fish Commission, warned that the near-shore banks were being depleted and recommended a limit on the number of fish caught. As was often the case when questions of overfishing arose, the Canadian and American fishermen began quarrelling over which group was to blame.²⁵ And as was often the case, the Commission that investigated avoided taking sides by recommending a scientific investigation.

²⁴ Kurkpatrick Dorsey, *The Dawn of Conservation Diplomacy: U.S.-Canadian Wildlife Protection Treaties in the Progressive Era* (Seattle: University of Washington Press, 1998).

²⁵ John Thistle. "As Free of Fish as a Billiard Ball is of Hair": Dealing with Depletion in the Pacific Halibut Fishery, 1899-1924." *B.C. Studies*. Summer/Autumn, no. 142/143, (2004): 109.

The Report of Commission of Fisheries for the Province of British Columbia for the year ending December 31st, 1913, stated that the fishery needed to be studied:

In the case of the halibut, prediction is made that the fishery will be depleted, although the success of the catch in recent years would not seem to warrant this. Immediate study should be given to its life-history, however, in order that protective and other measures be taken to conserve it.²⁶

The Province turned to Stanford University and the zoology program established by the eminent Charles Gilbert. Gilbert began studying salmon in B.C. in 1912 and the investigation was expanded in 1914 to include the halibut fishery. Gilbert hired a promising young student, William F. Thompson (1888-1965) as his assistant. Thompson had graduated from Stanford in 1911 with a B.A. degree in zoology. He began graduate work at Stanford under Gilbert, including work in British Columbia on halibut, the start of laying a scientific foundation for the subsequent management of the resource by the International Fisheries Commission in the 1930s, and the start of a 50-year career in which he became the most widely known fishery scientist and educator in the Pacific Northwest.²⁷

To begin to tease out the secrets of the fish in the sea, scientists had to go to sea, often with fishermen, or on cruises chartered on fishing boats. They needed to determine when fish spawned, and where, how many eggs were laid? How many hatched? Where did the fish go after they hatched, and how quickly

²⁶ J. Richard Dunn, "William Francis Thompson (1888-195) and his pioneering studies of the Pacific Halibut, *Hippoglossus stenolepis*. *Marine Fisheries Review*. 63 no. 2 (2002): 6.

²⁷ *Ibid*, 3.

did they grow? At what age did they start to spawn, and for how many years did spawning continue? It was difficult, tedious and slow work, often performed under uncomfortable and dangerous conditions in winter. W.F. Thompson described it in a 1915 report on halibut sampling:

The fish were examined on the deck as they were brought in. The decks were always so slippery and slimy that it was necessary to lash the fish down 'fore and aft' to guard against the rolling movements of the vessels as they lay in the trough of the seas. Also, of course, the place chosen to work on could not be in the way of the fishermen at their work, and it was, therefore, necessarily distant from the 'checkers' or pens of fish, despite the difficulty of handling heavy fish on a slippery deck. Care was likewise necessary that no cuts were made which could injure the market value of the fish. As a result of these conditions it was possible to examine less than a hundred fish in a day, save in exceptional cases where the fish were small. It need only be said that accurate work under such conditions was time consuming.²⁸

Thompson played a central role during this period in the development of statistical tools that captured what was happening in the fishing industry, how many fish were caught, their size, where they had been taken, on what kinds of gear. It was the start of what would become the CPUE concept, or Catch per Unit of Effort. A falling CPUE would become one of the most important signs that too many fish were being harvested. As the catch of individual fishermen dropped, despite increased catches overall, it was a sign that stocks were in decline.

"The biology was understood: fish grow and die, but reproduce large numbers of young only in certain years," biologist Tim Smith wrote. "The effects of fishing, at least some of them, were known: fishermen could catch a large

²⁸ J. Richard Dunn, "William Francis Thompson (1888-195) and his pioneering studies of the Pacific Halibut, *Hippoglossus stenolepis*. *Marine Fisheries Review*. 63 no. 2 (2002): 8.

proportion of a population in a year, and periods of reduced fishing were followed by periods of increased catches."²⁹ The conundrum was why: what were the natural conditions that caused fish runs to fluctuate? What role did fishing play in the fluctuations? How could a scientist know when declines were due to natural fluctuations, or was a sign that too many had been caught and the fishery ought to be regulated?

2.3 W.F. Thompson Goes to California, 1917-1925

When the halibut investigation wound down in 1917, Thompson was hired by the California Fish and Game Commission to investigate the state's fishery resources. California was one of the first states to organize a fishery research program. A five-member State Board of Fish Commissioners had been created in 1870. Fishing was not especially organized or systematic until 1914, when the legislature authorized creation of the Bureau of Commercial Fisheries and appointed Norman Scofield, a student of Charles Gilbert's, as its first administrator. The responsibilities of the new agency were to gather statistics, study fishing methods, processing and handling, and learn more about the fish themselves. The new agency was created because there was concern about exhausting the stocks as the fisheries rapidly developed. According to the Biennial Report of the Fish and Game Commission of California in 1918, the

²⁹ Tim Smith, *Scaling Fisheries: The Science of Measuring the Effects of Fishing, 1855-1955* (Cambridge: Cambridge University Press, 1994), 195.

most important work that could be done was the gathering of accurate statistics on state fisheries, to provide a basis for management and “conservation”—in the Pinchotian sense.³⁰

The legislature passed a Fisheries Tax Bill in 1917, obligating packers and curers of fish to pay a tax of 2.5 cents for every 100 pounds of fish landed, with the money going to pay for a patrol boat and a research laboratory. Thompson established a research program that aimed to distinguish the natural fluctuations of the sardine population from the impacts of fishing.

In 1915, the legislature had passed a law requiring fish buyers to issue receipts to fishermen. The receipts could be collected by the Bureau of Commercial Fisheries, but the initial information from the packers was often inaccurate and incomplete.³¹ The 1917 legislature amended the earlier law, requiring dealers to keep carbon copies of receipts on file, for inspection. Meanwhile, the federal government’s Food Administration demanded information on the catch as part of war-time accountability. The resulting changes in the collection process became known as the “pink-ticket system.” It required three receipts: one to the fishermen, the pink copy for Fish and Game, and the third retained by the fish dealer.

The agency began publishing a quarterly report called California Fish and Game in 1915. The first set of statistics, “California Fishery Products for Three

³⁰ The Fish and Game Commission of California, *Biennial Report of the Fish and Game Commission of California, 1918* (California, 1918), 10-11.

³¹ The Fish and Game Commission of California, *Biennial Report of the Fish and Game Commission of California, 1918* (California, 1918), 50.

Months ending March 31, 1916,” was published in Vol. 2, Number 3. The table showed 44 species of fish, caught in 15 different regions of the state, with a total harvest of 8.6 million pounds.³²

If Charles Gilbert is considered the intellectual founder of American fisheries science, then his student, W.F. Thompson, can be considered the master practitioner, the man who designed the practical ways to compile fisheries statistics and interpret what they mean. Thompson was particularly concerned about what we would now call the ecological implications of the escalating catches of California sardines (*Sardina caerulea*). Part of his research plan involved answering several questions. Was depletion occurring? What were the natural fluctuations in the runs? Did the fish migrate? To answer the questions, he needed to know the commercial catch of sardines by vessel type, gear and fishing area, the composition and variations of catch by size and age, the yearly abundance of young sardines and the age and rate of growth. The information from the fish tickets was augmented by additional data collected at the docks each day, on the length, average weight, sex, and degree of maturity from a random sample of the catch.³³ Thompson was proud of the system he had established:

This system is to the best of our knowledge one without parallel in any country, and it has already proved itself superior to any statistical system we are acquainted with. It registers the catch of every boat, leaving its record for subsequent study by scientists in conjunction with other records by which changes in apparatus and

³² The Fish and Game Commission of California, *California Fish and Game* 2, no. 3 (1916): 166.

³³ J. Richard Dunn. “William Francis Thompson (1888-1965) and the Dawn of Marine Fisheries Research in California,” *Marine Fisheries Review* 63, no. 2 (2002): 19.

economic conditions may be discounted, in order that there may be obtained a measure of the fluctuations in abundance of fish from year to year...That there are faults in the system must be taken for granted, but the faults are infinitesimal compared to those of statistical systems depending upon estimates and hearsay.³⁴

Progress, at least, was being made. Yet elsewhere Thompson revealed his continued frustration. Writing in the 1919 edition of another agency publication, *Fish Bulletin No.2*, he was more critical, calling the fisheries research “chaotic” and subject to errors that made conclusions tentative.³⁵ Nevertheless, Thompson expressed and pursued the ideal of his era: that the resource should be conserved so it could be used to its full potential. This was such an important function that it had to be carried out by the state. But statistics alone were not enough. Thompson used italics to emphasize and repeat this point: “*A biological study of the species concerned is, therefore, inseparable from the statistical studies.*”

Rational management required rational science—and this science was increasingly mathematical. In 1922, Thompson found a math tutor, a second-year electrical engineering student at the California Institute of Technology. William C. Herrington spent the summer coaching Thompson on calculus, then transferred to Stanford to study under Charles Gilbert. Thompson continued to employ Herrington after his graduation.³⁶ Herrington later worked for the U.S. Bureau of

³⁴ The Fish and Game Commission of California, *California Fish and Game* 6, no. 1 (1920): 178.

³⁵ Will F. Thompson, “The Scientific Investigation of Marine Fisheries, as Related to the Work of the Fish and Game Commission in Southern California” *State of California Fish and Game Commission Fish Bulletin* 2, (1919).

³⁶ Tim Smith, *Scaling Fisheries: The Science of Measuring the Effects of Fishing, 1855-1955* (Cambridge: Cambridge University Press, 1994), 269.

Commercial Fisheries, and served at the head of the fisheries branch during the American occupation of Japan. On his return to the U.S., he became the fisheries advisor to the State Department, and an important figure in the creation and execution of post-war fisheries policy. We will return to him in Chapter Six.

As Thompson was trying to gather and organize his data, the fishery was growing exponentially. In 1915, production was 75,000 cases, but just three years later (propelled by the demands of World War I) it soared to 1.4 million, making sardines the largest commercial fishery in the United States.³⁷ State biologists expressed concern about the health of the stocks, but any attempt to curtail fishing was bitterly fought by the politically powerful industry. Trying to separate the natural fluctuations of the stock from the impact of fishing was challenging: were declines in catch due to biology or to economics? While the state had put its pink ticket system into place, plants frequently put boats on limits, so the catch data were incomplete. Thompson explained the errors in the sampling program in *Fish Bulletin No. 11*, published in 1926. Catches were sampled at the docks, but how representative were the samples? Did the samples accurately reflect the various year classes that made up the catch?

When survival conditions were good, there were extremely large year classes, but they were often followed by years of poor survival. Sorting out the various year classes in the catch, based on samples, was

³⁷ Tom Mangelsdorf, *A History of Steinbeck's Cannery Row* (Santa Cruz: Western Tanager Press, 1986), 26.

difficult because the sizes of the year classes were so variable. Thompson's solution was more research, more samples, so biologists could develop a system of weighting the statistics to correct for the sampling errors. At the same time, he and other biologists continued their work in the basic biology of the fish.³⁸

Thompson was well aware of that in Europe fisheries biology was moving towards large-scale, cooperative, international investigations, such as those sponsored by the International Council for the Exploration of the Sea (ICES). But he thought it impossible for a small state such as California, with such limited resources, to undertake such an expansive study of the sea. And he thought that such a detailed study might unnecessary overkill. Expansive studies

would have been tunneling the mountain by removing it in its entirety. It was necessary for the state to limit its efforts to those fields which had been shown to bear directly on the ascertainment of the variance in abundance of the fisheries; namely, the measurement of the variance in abundance of the fishes in the sea, the effects of fishing upon it and the biological criteria of overfishing. A careful perusal of much of the hydrographic and planktonic work demonstrated its remoteness from the work in hand despite its undoubtedly great ultimate value, and showed that most of the immediate questions could be solved to the required degree without their aid.³⁹

A critical distinction for Thompson between his work and the work undertaken by European scientists was that they were not dealing with fisheries on virgin stocks. While detailed hydrographic and plankton work was clearly of value, it

³⁸Will F. Thompson, "Errors in the Method of Sampling Used in the Study of the California Sardine," in *Fish and Game Commission of California Fish Bulletin* 11 (1926): 159-189.

³⁹Will F. Thompson. "The Marine Fisheries, the State and the Biologist." *The Scientific Monthly*. No. 15, 1922. 542-550. 549.

was more detail than scientists needed to estimate how many fish could safely be harvested. Thompson warned that it was easy to mistake natural fluctuations in catch as declines. “The imposition of arbitrary and reckless restrictions should be prevented by the acquisition of proper knowledge as soon as possible.” Despite concerns about overfishing of stocks, scientists like Thompson were extremely reluctant to restrain fishing without evidence of collapse.

2.4 Regulating Fishing

In his account of the collapse of California sardines, Arthur McEvoy wrote that even when there was evidence that stocks were exhibiting stress, there was great reluctance to restrain developing fisheries. Part of the problem was institutional, with state and federal government agencies dividing responsibility and power. The fishing companies were well-organized and politically powerful, representing processing jobs in coastal communities. The state itself was involved in expanding fisheries, through research on methods of preservation and marketing of the catch. The evidence of fishery decline was not clear-cut, because there were still good years when catches increased, only to plummet again. Scientists focused on the pattern and the downward trend. Industry countered that the peaks meant the stocks were capable of withstanding the fishing pressure. The scientists themselves did not believe in unnecessary regulation.⁴⁰ “It would be indeed sheer waste to impose a limit below what might

⁴⁰ Arthur F. McEvoy, *The Fisherman's Problem: Ecology and Law in the California Fisheries* (Cambridge: Cambridge University Press, 1986), 183.

be safely taken and the alternative is plain, to allow the imposition of all the strain the species will carry,” Thompson wrote in a 1922 paper.”⁴¹ Conservation meant wise use, taking fish for the benefit of humanity. It was not at all clear that the runs were declining, or what needed to be done, and any suggestions that fishing should be curtailed were met with instant and organized resistance from the industry. (See Table 1, sardine landings, 104)

In 1919, the legislature passed a law that gave the California Fish and Wildlife Commission the power to regulate the sardine fishery. The law stated that sardines were to be processed for human consumption. Reductions for by-products would require written permission from the Department and would be allowed only to prevent unavoidable waste. By 1921, the canners succeeded in changing the law, allowing up to 25 percent of monthly canning capacity to be reduced for oil or animal feed.⁴² During the next two decades, as canners sought to evade the restrictions on processing of the catch, California state biologists, such as Frances Clark (1892-1987), warned that too many sardines were being harvested.⁴³ Clark, who worked as a biologist in California between 1926 and her retirement in 1957, was the first woman to head the California State Fisheries Laboratory at Terminal Island, and was deeply involved in research into sardine fluctuations.

⁴¹ Will F. Thompson. “The Marine Fisheries, the State and the Biologist.” *The Scientific Monthly*. No. 15, 1922. 542-550. 547.

⁴² Tom Mangelsdorf, *A History of Steinbeck’s Cannery Row* (Santa Cruz: Western Tanager Press, 1986), 37.

⁴³ John Radovich. “The Collapse of the California Sardine Fishery: What Have we Learned?” *California Cooperative Oceanic Fishery Investigations Reports* 23 (1982): 59.

The decline in the sardine fishery, starting in the 1920s, first began in the north, off British Columbia, then off Washington, Oregon, and finally California, until the only fishery left was in the California Bight.⁴⁴ By 1930, floating reduction plants, called floaters, began operating outside the state's territorial waters. They were not subject to any operating regulations or quotas, and paid no state fees. Shore-side cannery argued they could not compete economically and lobbied Sacramento for liberalized reduction permits. It was the height of the Depression, and the Fish and Game Commissioners (who were replaced in 1939) refused to curtail the catch. They had the support of federal scientists, who were concerned with the development and maintenance of commercial fishing. State scientists wanted to protect the State's resources and argued that overfishing was having a detrimental effect on the standing stock of sardines. As Clark wrote in 1939, her laboratory had been "crying the wolf of future scarcity for several seasons until it now seems futile to repeat the cry. Nevertheless, it appears that the wolf will be at our doors in the all too near future."⁴⁵

2.5 Establishing a School of Fisheries, 1913-1928

Fishing was also an important industry in the State of Washington, second only to forestry in the jobs it provided. Much of the prominence of the fishing

⁴⁴ R.C. Francis, J. Field, D. Holmgren, and A. Strom, "Historical Approaches to the North California Current Ecosystem," in *The Exploited Seas: New Directions for Marine Environmental History*, ed. Tim D. Smith, Poul Holm, and David J. Starkey (St Johns, Newfoundland: The International Maritime Economic History Association and the Census for Marine Life, 2001), 127.

⁴⁵ Frances N. Clark, "Can the supply of sardines be maintained in California waters?" *California Fish and Game Quarterly* .25, 172-176. 1939.

industry in the State's economy was because Seattle was the gateway to the largest and most economically important American fishery, Alaska. Starting in the 1890s, as the Washington and Oregon canning industry started to organize industrial fishing in Alaska, everything that was needed for the season had to be shipped north. Fishing camps were isolated places, often at the head of an inlet, surrounded by towering mountains. The catch, known as the pack, had to be shipped south for distribution to market. Seattle was the Alaskan fishing hub, and the logical place to think about establishing a school of fisheries. Stanford University's zoology department, headed by Charles Gilbert, may have been the premier scientific institution on the West Coast for marine studies, but the backers of the Washington school of fisheries had more specific objectives.

In 1913, Hugh M. Smith, the Commissioner of the U.S. Bureau of Fisheries, delivered a paper to the American Fisheries Society lamenting that professional training in fisheries was available in Ireland, France, and Japan, but not in the U.S. There was not a single American university or college "where even the rudiments of an education in fishery technique may be obtained," despite the fact that one out of every 80 individuals in the country was directly dependent on the fishing industry.⁴⁶ The following year, Smith suggested to the University of Washington that a school of fisheries be established to equip young men and women "for practical work in the service of the federal government, the

⁴⁶ Robert R. Stickney, *Flagship: A History of the Fisheries at the University of Washington* (Dubuque, Iowa: Kendall/Hunt Publishing Company, 1989), 1.

various states, and private establishments having to do with artificial propagation, the curing and marketing of fishery products, and the administration of the fishing industry.”⁴⁷

Founded in 1862, the University of Washington was already offering courses in ichthyology through the Zoology Department, but supporters wanted an actual fisheries school. They included Miller Freeman, publisher of *Pacific Fisherman*, and Trevor Kincaid, head of the university’s Zoology Program. Kincaid presented a paper to the Pacific Fisheries Society outlining a proposed program. The organizational structure was modeled on the world renowned Imperial Fisheries Institute in Japan, where practical instruction and research had been underway since 1897. Kincaid suggested a two-year program with a concentration of classes in administration, technology or fish culture during the second year. Six years later, the school was established in 1919, with John N. Cobb (1868-1930) as its director.⁴⁸

Cobb had not attended college but he had an impressive record as an author, naturalist, conservationist, and canneryman. He was one of twelve children born to a railroad engineer and his wife in Oxford, N.J. His first job, at the age of 16, was with a newspaper and he rose to become an editor. He passed a Civil Service examination in 1895 that qualified him as a typist and

⁴⁷ Ibid., 2.

⁴⁸ Robert R. Stickney, *Flagship: A History of the Fisheries at the University of Washington* (Dubuque, Iowa: Kendall/Hunt Publishing Company, 1989), 6.

stenographer for the U.S. government. He accepted a position as clerk in Washington, D.C., with the statistical division of the U.S. Fish Commission. Within a year, he was appointed a field agent and his career in fisheries began.

The job called for him to travel throughout the Eastern seaboard, collecting statistics on the fish and shellfish catch. In 1901 he was assigned to investigate the fisheries of Hawaii, a project that put him in touch with David Starr Jordan. When the Fish Commission refused to transfer him to the West Coast in 1912, Cobb went to work for a San Francisco fish company. The following year, he began writing for *Pacific Fisherman*, the Seattle-based trade publication owned by Miller Freeman. Cobb stayed four years, and he continued to publish scientific work. He helped found the Pacific Fisheries Society in Seattle, patterned after the American Fisheries Society.⁴⁹

Cobb laid out his vision for the school in 1920, not to train fishermen or scientists, but something in between, “men of executive ability with a thorough understanding of the fisheries.”⁵⁰ According to biologist J. Richard Dunn, Cobb’s approach to the school reflected his experience with the fishing industry and reflected the practical needs of the commercial industry.⁵¹ It would be a program

⁴⁹ J. Richard Dunn. “John Nathan Cobb (1868-1930): Founding Director of the College of Fisheries, University of Washington, Seattle” *Marine Fisheries Review* 65, no. 3 (2003): 5.

⁵⁰ Robert R. Stickney, *Flagship: A History of the Fisheries at the University of Washington* (Dubuque, Iowa: Kendall/Hunt Publishing Company, 1989), 15.

⁵¹ J. Richard Dunn. “John Nathan Cobb (1868-1930): Founding Director of the College of Fisheries, University of Washington, Seattle” *Marine Fisheries Review* 65, no. 3 (2003): 2.

in applied fisheries science and management. For Cobb, the salmon industry needed scientists, but it also needed men to run the fish companies and manage the growing complexity of the annual Alaskan fishery.

The faculty remained small, with a great deal of turnover, probably the result of the low salaries. There were two tracks of study, fish culture and fisheries technology.⁵² Enrollment was strong during the first decade, ranging from 30 to 117 students a year. The first graduating class was in 1922, and the first Master of Science degree in 1924. By 1928, he could boast that 40 graduates had found work in some branch of the fisheries. Meanwhile, evidence of the problems with fishing was mounting.

2.6 The Fluctuating Salmon Catch

In 1919, Charles Gilbert and Henry O'Malley had wondered if the fluctuations in Bristol Bay sockeye catches were a natural phenomenon, or indications of overfishing.⁵³ The drop in the salmon catch was a coast wide concern. By the mid-1920s, people were increasingly considering it to be the latter.

The situation was serious enough that *Pacific Fisherman* publisher Miller Freeman organized a two-day meeting in Seattle in 1925, bringing together twenty-six men from Alaska, British Columbia, Washington, Oregon, and

⁵² Ibid., 14.

⁵³ Charles H. Gilbert and Henry O'Malley, "Special Investigation of Salmon Fishery in Central and Western Alaska," *U.S. Bureau of Fisheries Document 891*. Alaska Fisheries and Fur Industries, 1919, 143-160.

California, as well as federal officials. But the meeting focused entirely on increasing production: facilitating the transfer of salmon eggs from one region to another, eliminating the enemies of salmon (predators), controlling the ocean troll fishery, and securing passage for salmon at high dams.⁵⁴ Restricting catches was not on the agenda. Charles Gilbert, who attended, stressed the need for more information about salmon. “We cannot any of us point with pride to the advance that has been made,” Gilbert told the group, adding that trying to manage salmon without more basic knowledge was “merely groping in the dark.”⁵⁵

There was still a general faith in hatcheries, although some, including John Cobb, questioned if the hatcheries actually produced more fish. The early hatcheries were dreadful places, with high incidences of fish tuberculosis, and no ability to feed the fish adequately after they were hatched. In 1922, the British Columbia Fisheries Commission recommended that a scientific experiment be conducted over the course of several years to evaluate hatchery performance. Biologist Russell Foerster started a series of experiments at Cultus Lake in the Fraser River drainage in 1925. His study marked a major departure from previous practices, because it did not seek to measure the number of smolts released, but to compare the efficiency of propagation with that of natural

⁵⁴ Jim Lichatowich, *Salmon without Rivers: A History of the Pacific Salmon Crisis* (Washington, D.C.: Island Press, 1999), 152.

⁵⁵ *Ibid.*, 156.

spawning. The work was to be done over three generations of sockeye salmon. Foerster studied how many young smolts were released and how many adults returned.

By 1936, he was able to report that the efficiency of artificial propagation was not significantly different from that of natural propagation. The Canadian government immediately announced the closure of its hatchery facilities, despite protests from fishermen and the salmon industry.⁵⁶ A similar investigation at Karluk Lake on Kodiak Island confirmed many of Foerster's conclusions. The U.S. Bureau of Fisheries began closing Alaskan hatcheries in 1936.⁵⁷ The last Alaskan hatchery closed in 1936. But as historian Joseph Taylor III pointed out, the decisions, coming during the Depression, had more to do with budgetary constraints than the scientific findings.⁵⁸

After 1919, Alaskan catches continued to plummet, prompting the industry to side with scientists in proposing that the catch be regulated. There was a Congressional investigation, and Maine Congressman William White introduced a bill in 1921 to protect salmon by extending federal authority three miles beyond the mouth of Alaskan streams and empowering the Commerce Secretary to regulate fisheries. Within a month, the Alaskan territorial delegate, Don Sutherland, submitted a similar bill, but giving the authority to regulate to the territorial government. Congressional hearings followed, but the battle to save the

⁵⁶ Jim Lichatowich, *Salmon without Rivers: A History of the Pacific Salmon Crisis* (Washington, D.C.: Island Press, 1999), 148.

⁵⁷ Joseph E. Taylor, III, *Making Salmon: An Environmental History of the Northwest Fisheries Crisis* (Seattle: University of Washington, 1999), 219.

⁵⁸ *Ibid.*, 220.

fish was “inextricably linked to question of who should benefit.”⁵⁹ The large canneries, which controlled the fish traps, were at odds with the territorial residents, who sought to decrease federal control. As historian Joseph Taylor III argued, conservation during the 1920s was reworked to accommodate industry, in hopes of achieving conservation but not restricting the harvest.⁶⁰ It took until 1924 for a consensus of sorts to emerge, and the White Act was passed.

The Act gave broad authority to the Secretary of Commerce to regulate fisheries in all territorial waters, including the authority to limit catch, size, and type of fishing gear, as well as fishing seasons. It specified 36-hour weekend closures of fish traps and that at least 50 percent of all salmon were to be allowed to escape the fishery to spawn. The 50 percent estimate was not backed by any biological study or meaningful enforcement, especially with regard to the fish traps.

The act did not give authority to federal agencies to limit the number of fishermen, but rather it increased the inefficiency of fishermen, by limiting fishing time and gear types. But federal enforcement was already lax and inconsistent in Alaska. Some areas were allowed to innovate in the use of fishing boats and

⁵⁹ Joseph E. Taylor, III, “Well-Thinking Men and Women: The Battle for the White Act and the Meaning of Conservation in the 1920s,” *Pacific Historical Review* 71, No. 3 (2002), 357-387, 365.

⁶⁰ *Ibid*, 386.

gear. In Bristol Bay, for example, fishing was limited to small sail boats.

Enforcement was largely a matter of judgment on the part of the few management officers, rather than based on consistent objective observations.⁶¹

Enforcement also favored industrial fishing over individual fishermen. The highly-efficient fish traps, controlled by the canneries and large fish companies, were virtually unrestricted in their operation.⁶² The regulations favored the canners by punishing fishermen for infractions. Section Six of the Act allowed wardens to seize traps, boats, and all fishing gear for violations. As interpreted by the Bureau of Fisheries, this meant boats and gear could be seized for suspected violations. The fisherman had the choice of admitting guilt on the spot and paying a fine, or awaiting trial, which meant losing most of all of the fishing season and that year's livelihood. Alaskan delegates introduced bills to end the abuse, but they didn't make it out of committee. Traps, on the other hand, weren't confiscated. If a trap was operating when or where it should not be, a fine was issued, "without more than a brief interruption, if any, in the trap's fishing."⁶³

The White Act concentrated political power in Washington, D.C., at the expense of the Alaskan territorial residents, who disregarded laws they had no

⁶¹ Roy I. Jackson and William F. Royce, *Ocean Forum, an Interpretive History of the International North Pacific Fisheries Commission* (Farnham, Surrey: Fishing News Books Ltd., 1986), 67.

⁶² John H. Clark, Andrew McGregor, Robert D. Mecum, Paul Krasnowski and Amy M. Carroll. "The Commercial Salmon Fishery in Alaska" *Alaska Fishery Research Bulletin* 12, no. 1 (2006): 2.

⁶³ Ernest Gruening, *The State of Alaska* (New York: Random House, 1968), 385.

part in creating. The canners continued to push Congress to raise harvest limits.⁶⁴ In 1925, Congress voted funds to pay for a statistical analysis of the catch in Bristol Bay, seeking to answer an extremely important question: did scientists at last have enough information to determine the maximum productivity of the runs?⁶⁵

The pack crept up again to 6.6 million by 1926, and then fell disastrously in 1927.⁶⁶ By 1928, after a further study of Alaskan salmon, biologists Willis H. Rich of Stanford University, and his assistant, Edward M. Ball, were raising the question, had the Alaskan salmon runs reached maximum productivity? Did the wide fluctuations in abundance mean that the available surplus of salmon had been taken? Rich and Ball thought the salmon fisheries had reached that point by 1918. But even while Rich and Ball suggested that the fishery must be regulated, they thought it was possible to continue to harvest, writing that “in the interests of true conservation the regulations must not be made so stringent as to reduce the commercial yield below what the resource can safely provide.”⁶⁷ The basic belief in the reproductive capacity of the stocks was undiminished and the Progressive legacy of conserving fish by using them was undiminished as well.

⁶⁴ Joseph E. Taylor, III, *Making Salmon: An Environmental History of the Northwest Fisheries Crisis* (Seattle: University of Washington, 1999), 4.

⁶⁵ Willis H. Rich and Edward M. Ball. “Statistical Review of the Alaska Salmon Fisheries. Part 1, Bristol Bay and the Alaska Peninsula.” *Bulletin of the U.S. Bureau of Fisheries*, 44 (1928): 43.

⁶⁶ *Ibid.*, 41.

⁶⁷ *Ibid.*, 46.

2.7 Conserving Halibut

In 1923, Canada and the U.S. signed the world's first international agreement designed to conserve a depleted deep-sea fishery. The Convention for the Preservation of the Halibut Fishery of the Northern Pacific Ocean was signed on March 2, 1923, after four years of negotiations and bitter accusations over whether Canadians or American fishermen were responsible for the decline.⁶⁸ It was ratified by both countries in 1924. Provisions included a three-month closed season during winter, when fishing was most dangerous, and regulations concerning halibut caught incidentally during the closed season. The Convention also created an International Fisheries Commission of four members. Each country was to pay the expenses of its two Commissioners, while the Commission and staff expenses were to be shared equally by the contracting parties. The Commission was charged with studying the life history of halibut and with recommending regulations for the preservation and development of the fishery.

The job of Director of Investigations was offered to W.F. Thompson in 1925. Thompson's earlier research in British Columbia had already established that halibut matured very slowly. Females took between twelve and fifteen years to mature, an obvious important implication for an intense fishery on immature

⁶⁸ John Thistle. "As Free of Fish as a Billiard Ball is of Hair": Dealing with Depletion in the Pacific Halibut Fishery, 1899-1924." *B.C. Studies*. Summer/Autumn, no. 142/143, (2004): 109.

fish.⁶⁹ Thompson set up a tagging program to study halibut migration, and in 1928, he brought William Herrington (his old math tutor) to Vancouver to oversee the tagging work.⁷⁰

Thompson's work with halibut provided a critical piece of information on the role of fishing on fish populations. His close study of the fish and the fishery showed that high catches were being maintained only because fishermen were increasing the territory they fished. To Thompson, this meant that fishermen were systematically depleting grounds close to their home ports, forcing them to travel greater distances at higher costs. "The result was a maintained total catch, hiding successive depletions of bank after bank, until the yield that came originally from an area of 500 miles was stretched over 2000 miles of coast from Oregon to Bering Sea," Thompson wrote in 1935.⁷¹ It was the same conclusion that Willis S. Rich and Edward M. Ball had reached in 1928, as they reconstructed the impact of fishing on Alaska salmon runs.⁷² Rich and Ball had found that the catch kept rising, but fishermen were fishing on more runs, moving into areas that had not been fished before. To keep catches high, fisheries had to systematically and inexorably expand into new territory.

But Thompson had also learned something else. As more fishermen and gear entered a fishery, the amount of fish each fisherman caught declined. As

⁶⁹ Ibid., 112.

⁷⁰ Tim Smith, *Scaling Fisheries: The Science of Measuring the Effects of Fishing, 1855-1955* (Cambridge: Cambridge University Press, 1994), 268.

⁷¹ E.S. Russell, *The Overfishing Problem* (Cambridge: Cambridge University Press, 1942), 4.

⁷² Willis H. Rich and Edward M. Ball. "Statistical Review of the Alaska Salmon Fisheries. Part 1, Bristol Bay and the Alaska Peninsula." *Bulletin of the U.S. Bureau of Fisheries*, 44 (1928): 46.

the number of fishermen increased, the total catch would increase, but each fisherman was getting a smaller slice of the profits. In short, the Catch per Unit Effort (CPUE) was falling.⁷³ If fishing was unrestricted, soon there would be no profits at all.

2.8 Thompson and the School of Fisheries

In the summer of 1929, John Cobb suffered a heart attack; he died on Jan. 13, 1930. His death came as a new president took over the University of Washington, M. Lyle Spencer, a man who was devoted to the principles of scholarship and high academic standards, with little patience for elective or technical classes. In 1930, during a curriculum review, the School of Fisheries was discontinued. Only one faculty member, the ichthyologist Leonard Schultz, who had been hired in 1928, was able to keep his faculty job. The fisheries students were incensed. In a telegram to the Washington Governor Roland Hartley, they called for the resignation of President Spencer and an investigation into what had happened:

IS THIS FIRST STEP FOR ELIMINATION OF ALL UNIVERSITY
TECHNOLOGY SOURCES QUESTION STOP WE ASK YOU TO
INVESTIGATE TRUE SITUATION OF ABOLITION OF ONLY
TRAINING GROUND FOR STATES SECOND LARGEST
INDUSTRY.⁷⁴

⁷³ Tim Smith, *Scaling Fisheries: The Science of Measuring the Effects of Fishing, 1855-1955* (Cambridge: Cambridge University Press, 1994), 213.

⁷⁴ Robert R. Stickney, *Flagship: A History of the Fisheries at the University of Washington* (Dubuque, Iowa: Kendall/Hunt Publishing Company, 1989), 22.

The program was later re-instated and Thompson was appointed director of the School of Fisheries at the University of Washington in 1930, the same year he attained his doctorate from Stanford. The appointment was initially part-time, in addition to his duties at the International Fisheries Commission, and his salary was \$2,000 a year.⁷⁵ That Thompson needed two part-time jobs to make a living was a reflection of the difficult times of the Depression. Markets collapsed and so did fish prices. The State of Washington suffered such reduced tax revenues during 1931-1932 that the university instituted a 10 percent salary cut.

Thompson strengthened the students' training in science and cancelled Cobb's classes in fishing methods and canning technology. His curriculum emphasized fisheries biology and conservation, with close ties to mathematics and chemistry.⁷⁶ The program graduated about 10 students during the next decade. Course offerings remained abbreviated throughout the 1930s, and in 1938 Thompson wrote that the School of Fisheries had the poorest buildings on campus.⁷⁷

Two of Thompson's students during the 1930s became enormously influential during the coming decades. It is possible that one of the students signing the telegram to the Washington governor was a 20-year-old undergraduate from Kalama, Wash., Wilbert McLeod Chapman. Chapman

⁷⁵ Robert R. Stickney, *Flagship: A History of the Fisheries at the University of Washington* (Dubuque, Iowa: Kendall/Hunt Publishing Company, 1989), 23.

⁷⁶ Jim Lichatowich. *Salmon Without Rivers: A History of the Pacific Salmon Crisis*. (Washington, D.C., Island Press, 1999). 158.

⁷⁷ Robert R. Stickney, *Flagship: A History of the Fisheries at the University of Washington* (Dubuque, Iowa: Kendall/Hunt Publishing Company, 1989), 33.

became one of the program's most illustrious graduates; some eighteen years later he would return as director of the College of Fisheries. It is impossible to think that Chapman, with his flair for organization and zest for politics, was not somehow involved in this protest over the direction that his education would take during the next several years. Chapman went on to become the first fisheries attaché at the State Department in 1948, and helped establish the International Commission for North Atlantic Fisheries (ICNAF) and the Inter-American Tropical Tuna Commission (IATTC), topics that will be discussed in Chapter Five. Milner Bailey Schaefer graduated from the School of Fisheries in 1935 Magna Cum Laude and won the President's Medal for scholastic excellence. Schaefer was the first director of the tuna commission. He made a number of significant contributions to fisheries population dynamics that were essential to the scientific formulation of Maximum Sustained Yield, to which we will return in Chapter 11.⁷⁸

2.9 Resisting Limitations

By the 1920s, there was mounting evidence of problems with all the major West Coast fisheries. But there was also mounting resistance towards government intervention in the industry. The relationship between the American government and its fisheries has always been ambiguous. Until 1860, the

⁷⁸ Tim Smith, *Scaling Fisheries: The Science of Measuring the Effects of Fishing, 1855-1955* (Cambridge: Cambridge University Press, 1994), 324.

government of Massachusetts paid a bounty on the catch of cod.⁷⁹ Governments provided services to the industry, but industry generally did not pay enough in taxes and fees to cover administrative costs.⁸⁰

Under the laissez-faire government policies of the late nineteenth century, governments were reluctant to restrict economic activity. To remain competitive, fishermen had to catch more fish, or find another way to offset falling wages and quotas. Complaints about more efficient gear were common, but governments were reluctant to restrict competition and impede the march of progress. “Without restrictions on harvest, cutthroat practices were almost inevitable,” wrote historian Joseph Taylor III.⁸¹ At the same time, the market for fish was steadily increasing, thanks to the railroad, which brought cheap fish to an ever-expanding urban market.

By the end of the 1930s, scientists had documented that the great runs were undergoing fluctuations, but there was no agreement about what this signified—if anything. The battle was perhaps at its most bitter over sardines, where federal biologists sided with industry to prevent the state biologists from restricting the fishery. The sardine fishery had always been volatile. It collapsed in chaos in 1932, when the price of raw fish dropped substantially. “By then the sardine fishery was probably the most intensive the world had ever seen,” wrote

⁷⁹ Samuel Eliot Morison, *The Maritime History of Massachusetts, 1783-1860* (Boston: Houghton Mifflin Company, 1941), 313.

⁸⁰ Henry A. Regier, “Old Traditions That Led to Abuses of Salmon and Their Ecosystems,” in *Pacific Salmon and Their Ecosystems: Status and Future Options*, ed. Deanna J. Stouder, Peter A. Bisson, Robert J. Naiman (New York: Chapman & Hall, 1997), 22.

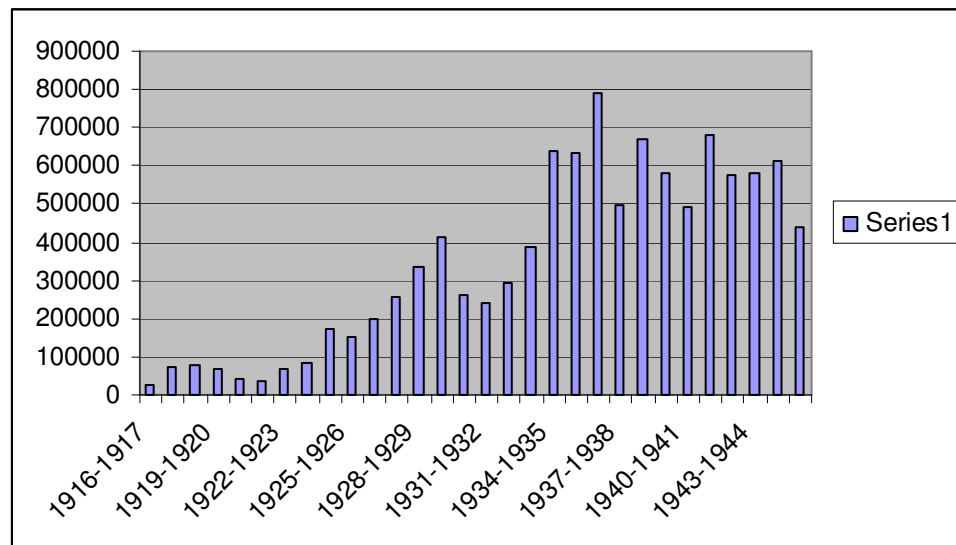
⁸¹ Joseph E. Taylor, III, *Making Salmon: An Environmental History of the Northwest Fisheries Crisis* (Seattle: University of Washington Press, 1999), 64.

Arthur McEvoy. “Japan’s harvest of sardine-like fishes was greater at the time, but that fishery was spread over a much larger expanse of water and took as many as five different species of clupeid fish, while the California industry relied on only one.”⁸²

By the end of the 1930s, fishermen, canners, and processors all argued that salmon, sardines, and halibut were still capable of high production. Scientists worried that the fluctuating catches were a sign of concern.

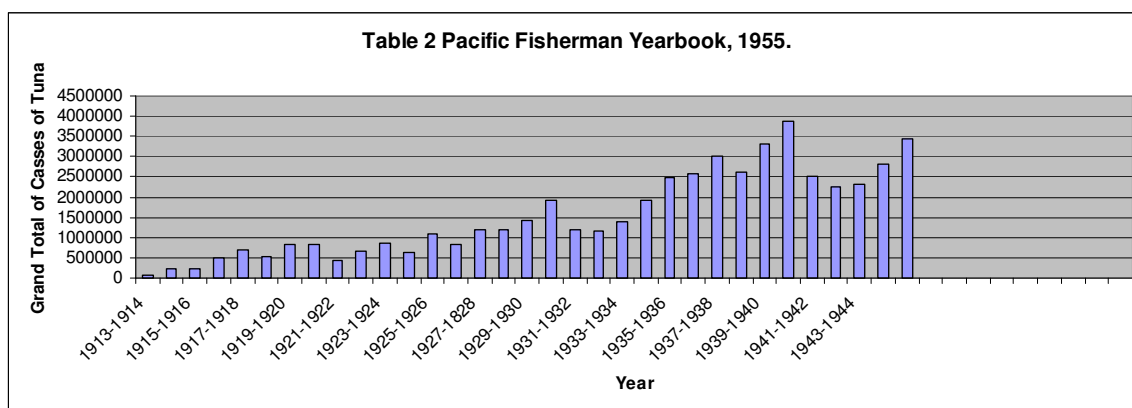
⁸² Arthur F. McEvoy, *The Fisherman's Problem: Ecology and Law in the California Fisheries* (Cambridge: Cambridge University Press, 1986), 145.

Graph 1 Sardine catches peaked in 1936-36, then began a steady decline.
(*Pacific Fisherman Yearbook*, 1941).



Graph 2 Salmon landings peaked in 1933-34, then began to steadily decline.

(*Pacific Fisherman Yearbook*, 1955).



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Chapter Three

The World's Best Fishermen

"It is no exaggeration to state that the marine industry symbolizes the spirit of the Rising Sun."

Yonematsu Mitsui,
*Japan's Fisheries Industry, 1939.*¹

From the day that Admiral Perry sailed into Tokyo Bay in 1854, Japan and the United States have contested for leadership and influence in the Pacific Ocean. There have been economic, diplomatic, and cultural battles, for trade and influence. But while historians, diplomats, and journalists have all examined many aspects of this rich story, there has been little attention paid to one of the most acrimonious and important struggles of all: the battle between the U.S. and Japan to control--or at least dominate--some of the richest fisheries in the world. Between 1930 and 1958, the U.S. and Japan fought over access to two of the world's great runs of fish, the salmon of the North Pacific Ocean, and the tunas of the ocean's temperate zones—a competition that set the stage for the ultimate destruction of the very resources they contested.

The history of fisheries interaction between the two countries is long and complex. There has been supportive exchange and cooperation, starting in the 1880s. Scientific information and fisheries technology flowed freely between both

¹ Yonematsu Mitsui, "Japan's Solid Strength in Present Emergency Traced to Achievements of Fisheries Science" in *Japan's Fisheries Industry 1939* ed. The Japan Times and Mail (Tokyo, 1939), 7.

countries. Yet at the same time, both countries used fisheries as a means to achieve imperialistic goals and to expand trade and influence throughout the Pacific region. Starting in the seventeenth century, Japan acted to increase its share of northern Pacific salmon. In the middle of the nineteenth century, a large American whaling fleet operated off Japan enroute to the grounds of the North Pacific.² The fishermen of both countries harvested fur seals in the North Pacific. After twenty-five years of wrangling, the two countries (with Canada and Russia) signed a treaty in 1911 to conserve northern fur seals in the Bering Sea, the first such international wildlife convention.³

By the 1930s, the fishing fleets of Japan and the United States were starting to touch, and to clash. The Japanese government had heavily subsidized the expansion of refrigeration technology, greatly extending the reach of its fisheries and drawing complaints from several nations, especially the U.S. By 1933, the Japanese were sending 600,000 cases of canned tuna into the American market.⁴ Congress passed retaliatory tariffs two years later to protect American fishermen.⁵

In Chapters One and Two, we saw how American fisheries scientists began to call attention to biological problems, an analysis that was strongly resisted by the fishing industries. At the same time, the scientists sounding the

² John Curtis Perry, *Facing West: Americans and the Opening of the Pacific* (Westport: Praeger, 1994), 92.

³ Kurpatrick Dorsey, *The Dawn of Conservation Diplomacy: U.S.-Canadian Wildlife Protection Treaties in the Progressive Era* (Seattle: University of Washington Press, 1998).

⁴ *Pacific Fisherman*, 1950 Yearbook, 23.

⁵ Files of the American Tuna Association, Box 18, Folder, "U.S. Tariff Report to the President, Fish Packed in Oil, Oct. 30, 1933.

alerts subscribed to the progressive era ideology of utilization that weakened their own willingness to suggest interventions. Here, we turn to the international situation, and to Japanese-American interactions over Pacific fisheries.

In this chapter, I argue that the most decisive event for the development of modern fishing was Japan's decision in 1936 to spend 89,000 yen to mount a scientific investigation into Bristol Bay sockeye. The American reaction to the decision, the Truman Proclamation of 1945, set off a chain reaction of territorial claims, not only in the Pacific, but in the Atlantic as well. The territorial claims drew fishing into a web of foreign policy concerns, for rich nations with distant water fleets, and for poorer nations seeking to enclose the fish off their coasts from foreign fishermen.

In the Truman Proclamation, the U.S. argued it had the right to create conservation zones adjacent to its coast, and to prevent boats from other countries from fishing, effectively "enclosing" the high seas for American interests. Mexico immediately filed to expand its fisheries jurisdiction, followed by similar declarations from Argentina, Chile, Peru, and Costa Rica, in order to protect their own valuable fisheries from U.S. boats—just as the U.S. was trying to protect "its" fish from the Japanese. The U.S. High Seas Policy, adopted in 1949, sought to find a "middle ground" between preventing the Japanese from fishing in Bristol Bay, yet allowing American boats to fish for tuna off Latin America.

The scientific component of the policy, Maximum Sustained Yield, ostensibly called for fish resources to be managed for conservation, so they could be fished in a sustainable manner. By 1955, when MSY was adopted internationally as the goal of fisheries policy, it was used to allow industrial countries to continue to fish throughout the world's oceans. Curtailing or halting fishing could only be done after scientific study documented that fish species were being depleted. MSY was a policy that placed the entire burden of conservation on a fledgling science that was only starting to grasp that the ocean's fish stocks were exhaustible, a realization that was disregarded in the enormous post-war expansion of global fishing. MSY institutionalized fisheries management into a process that focused science on estimating the critical biological points where stocks were being overharvested, then allowing measures to be applied to slow or halt fishing.

3.1 Japan and the Sea

The sea has always been of enormous importance to Japan. Fishing has been a vehicle of imperialism for Japan, going back to the seventeenth century. Fishing is so important it was imbedded into government policy and the educational system to a degree unmatched in any other country, save perhaps Iceland, and then only after 1945. Since feudal times, fishing has been an integral part of the economy of most small villages, and an elaborate social system controlled who was allowed to fish, and where fishing would be allowed.

While the American government was always loath to regulate fishing, in Japan regulation at the community level was essential because fish was so important to the food supply and the overall economy.

After 1869, the start of the Meiji Era, Japan aggressively expanded its fisheries, bringing in new technology from the west. The Japanese government created policies to develop the fishing industry, including subsidies to build larger boats. Japan led the world in developing canning technology on the high seas. Central to the Japanese system of fishery development was an extensive educational component devoted to all facets of fishing. From village schools that taught calisthenics aimed at producing strong fishermen who could haul in large tuna, to biological observations made by professional scientists and dedicated research workers, Japan had an extensive network of fishery development. By the early 1930s, it was the leading fishing nation in the world.

This industrial expansion was tied to imperial ambitions. Between 1895 and 1941, Japan greatly expanded its empire. Japan decisively won its war against China in 1895 and took its first colony, the island of Formosa (now Taiwan). It prevailed against Russia in 1905, giving it a foothold in Manchuria and later Korea. During World War I, Japan declared war on Germany, giving it access to German colonies in the Pacific, specifically the Marshall, Caroline, and Mariana Islands. Japan took over Manchuria in 1931, invaded China in 1937, and attacked Pearl Harbor in 1941. At the peak of its expansion in early 1942, the Japanese Empire reached north to the Aleutian Islands in the Bering Sea, and

south through the European colonies that had been owned by the Netherlands, the East Indies, French Indochina, the British colonies of Burma, Malaya, and Hong Kong, and the American colony of the Philippines.⁶

The Japanese also expanded their fisheries through the Pacific Ocean during the 1930s. By 1939, there were 1.5 million people involved in Japanese fisheries, with 364,000 boats bringing in catches valued at 400 million yen. Fishing boats had expanded into the Sea of Okhotsk, the Yellow Sea, the China Sea, and the South China Sea, and the Gulf of Tonkin. They held a virtual monopoly on all aspects of fishing in Southeast Asia, from catching to marketing, supplying 40 percent of the fish consumed in Malaya and half the catch in Singapore.⁷ Northward, they had pushed past the island of Sakhalin into the waters off Kamchatka, and finally into the Bering Sea.

Exploratory fishing operations were launched in Mexico and Argentina by 1933, while expeditions sought fish off the coast of northern Australia and into the Indian Ocean. Japan had joined the world's modern whaling fleets in 1934, and sent a modern fleet each winter to Antarctica.⁸ Their mothership fleets, large boats that carried small catcher boats with them, processed the catch at sea, first by salting, then by canning. It was the most sophisticated and successful fishing system in the world.

⁶ John W. Dower, *Embracing Defeat: Japan in the Wake of World War II* (New York: W.W. Norton & Company, 1999), 21.

⁷ Mark R. Peattie, "Nanshin: The 'Southward Advance,' 1931-1941, as a Prelude to the Japanese Occupation of Southeast Asia," in *The Japanese Wartime Empire, 1931-1945*, ed. Ramon H. Myers Peter Duus, and Mark R. Peattie (Princeton: Princeton University Press, 1996), 201.

⁸ Georg Borgstrom, *Japan's World Success in Fishing* (London: Fishing News (Books) Ltd., 1964), 253.

Fishing showcased Japan's industrialism and its modernity. "Situated as the Empire is, it was natural that her people should take to the sea and that their marine activities contribute a great deal toward the economic and industrial development of the State," wrote the editors of *The Japan Times & Mail* in 1939.

Under international law in the 1930s, the Japanese—and the boats of any other country—were free to fish anywhere in the world. Most countries recognized a territorial limit of three miles, long said to be the distance a cannon ball could fly. The Japanese fleet of fishing ships, with diesel engines and onboard salting, canning, and refrigeration plants, were able to work up to 3,000 miles from their home base, and they did.

Fishing was one of the signature Japanese industries, proof of the country's exceptionalism, a "belief in Japanese national uniqueness, and a mythology that stressed a heaven-granted mandate to assume the leadership of eastern Asia."⁹ The fisheries policy was discussed in those terms. "In fact, the Japanese flag is floating high on the masts of fishing craft on high seas in all directions, which fact demonstrates the earnest endeavors we are making in developing marine resources," wrote one of the authors in the *Japan Times & Mail*. "The Japanese people indeed regard it their inevitable fate or even a sacred mission to develop riches hidden in the sea."¹⁰ But as the 1930s went on, the sacred mission created deep unhappiness in other countries, especially the United States.

⁹ H.P. Willmott, *The Second World War in the Far East*, ed. John Keegan, *Smithsonian History of Warfare* (Washington, D.C.: Smithsonian Books, 1999), 42.

¹⁰ *The Japan Times and Mail, Japan's Fisheries Industry 1939* (1939), 10.

3.2 The Roots of Japanese Fishing

Westerners are inclined to think of the Tokugawa Shogunate (1603-1868) as a period when Japan was closed, at least to Western influences. While foreigners were excluded from the country, Japan was actively expanding its borders to the north, partly driven by a desire to harvest the rich stocks of fish in northern waters. The colonization of Hokkaido, the northernmost island, began during the Tokugawa period, with fishing as the primary vehicle of colonization. The principal feudal family on Hokkaido was the Matsumai, and by 1625 they began exploring the feasibility of exploiting salmon and sea cucumber fisheries in southern Sakhalin. In the 1750s, a Matsumai vassal named Kato Kahei took a merchant ship and investigated the waters off Sakhalin, seeking herring that could be used for onshore fertilizer. From the eighteenth century, Japanese ships traded in Sakhalin and a permanent Japanese fishery was established at Shiranushi in 1790.¹¹

Historian David L. Howell argued that an indigenous form of capitalism developed around the fishing industry in nineteenth century Japan. Fisheries were part of a market economy that extended the length of the Japan Sea coast and beyond, into the Inland Sea region of Osaka and Omi. These regional economies matured nearly a hundred years before the birth of the Meiji regime in 1868, usually thought to be the start of Japanese modernization. Howell argued their origins lay in medieval trade and communications networks that antedated

¹¹ Brett L. Walker, *The Conquest of Ainu Lands: Ecology and Culture in Japanese Expansion, 1590-1800* (Berkeley: University of California Press, 2001), 141.

the emergence of the commercial herring fishery by centuries.¹² Much of this early activity involved the island of Sakhalin, north of Hokkaido, which belonged to Russia. Historian Brett L. Walker agreed, arguing that the Japanese exploited the resources of Hokkaido, the Kurile Islands, and much of Sakhalin Island, “searching for new resources to fuel the flames of market growth, to fertilize cash crops, and to feed a stable urban population.”¹³

Both Howell and Walker speak to the ancient integration of fishing into Japanese life. Rules governing fishing were introduced in Japan as early 300 AD, in the dynasty of the Emperor Ojin. A set of laws governing fishing was introduced in the 7th century, during the reign of the Emperor Temmu. Various legal codes issued during the next several hundred years devote major sections to trade regulations governing fisheries products. A system of trade divisions, called “Za,” was introduced during the 13th century, similar to the guilds in Europe. Fisheries had its own “Za,” reflecting the fact that fishing had already been commercialized. The selling of fish was first organized in 1644, when guilds were established to sell fish to the Shogunate.¹⁴ During the Tokugawa period, it was forbidden to build vessels above 500-koku, about 50 tons. That made it impossible for Japan to sail the deep seas. But fisheries, including coastal whaling and large set-net fisheries, continued to develop during the period.¹⁵

¹² David L. Howell, *Capitalism from Within: Economy, Society, and the State in a Japanese Fishery* (Berkeley and Los Angeles: University of California Press, 1995), 14.

¹³ Brett L. Walker, *The Conquest of Ainu Lands: Ecology and Culture in Japanese Expansion, 1590-1800* (Berkeley: University of California Press, 2001), 13.

¹⁴ Theodore C. Bestor, *Tsukiji: The Fish Market at the Center of the World* (Berkeley: University of California Press, 2004), 106.

¹⁵ The Japan Times and Mail, *Japan's Fisheries Industry 1939* (1939), 20.

Almost all of the coastal villages were engaged in fishing to some extent.¹⁶ The village system offered Japan a way to limit the number of fishermen, or the kinds of fishing gear that were used in each area. With so many fishermen, and each village dependent on the catch, it was imperative that the village be able to control the amount of fishing in its coastal waters.

3.3 Fishing in the Meiji Era, 1868-1900

The beginning of modern Japan is generally associated with the start of the Meiji Era in 1868, when the last Shogun abdicated and Japan began a transformation into an industrial power.¹⁷ It was an awkward transformation, because the Japanese had been forced to sign unequal treaties with the British, Americans, and the Russians. The highly restrictive extraterritorial treaties restricted import tariffs and limited the industry that the Japanese would be able to develop. Since Japan was not able to invest in heavy industry, it was forced to specialize in areas where it had a niche advantage. Foreign competition also created a climate of extremely low wages. Both of these factors affected the formation of the Japanese combines, the *zaibatsu*, and would have a great impact on two industries that concern this study, shipbuilding and fishing.¹⁸

Political scientist Chalmers Johnson argues that Japan did not originally have an ideological commitment to state ownership. During the Meiji era, Japan

¹⁶ N. Oka, H. Watanabe, and Akira Hasegawa, "The Economic Effects of the Regulation of the Trawl Fisheries of Japan" *FAO Fish Reports* 5 (1962): 176.

¹⁷ Patrick Smith, *Japan, a Reinterpretation* (New York: Vintage Books, 1997), 53.

¹⁸ Jon Halliday, *A Political History of Japanese Capitalism* (New York: Pantheon Books, 1975), 52.

began to shift away from state entrepreneurship to collaboration between the state and privately-owned enterprises that were capable of rapidly adopting new technologies that could be used to achieve the national goals of economic development and military strength. The government induced companies to go into areas where development was needed—and possible—and the *zaibatsu* pioneered the commercialization of modern technologies in Japan.¹⁹ One of the most successful areas for this partnership between government and industry would be the rapid expansion of fishing from coastal Japan into the world's oceans.

One of the government's first steps was to incorporate the northern island of Hokkaido into the Japanese empire, to solidify the boundary with Russia. Serious settlement of Hokkaido began in 1867, as the government brought former samurai and their families to settle the island. Fishing was the chief economic activity on the island, engaging some 70 percent of the population.²⁰ In an attempt to modernize the island's economy, the government sent Kuroda Kiyotaka to govern Hokkaido in 1869. Kiyotaka was from a samurai family and he had visited Europe and the U.S. He was interested in the approach of American agriculture, which he saw as the key to development in Hokkaido. He persuaded General Horace Capron, a former U.S. Commissioner of Agriculture,

¹⁹ Chalmers Johnson, *MITI and the Japanese Miracle, the Growth of Industrial Policy, 1925-1975* (Stanford: Stanford University Press, 1982), 23.

²⁰ Glenn T. Trewartha, *Japan: A Geography* (Madison: University of Wisconsin Press, 1965), 320-321.

to be the principal foreign advisor in Hokkaido.²¹ By 1880, there were 78 foreigners employed by the Hokkaido Colonization Commission, and 48 of them were Americans. Many were teachers, but they also included technical specialists, including geologists, surveyors, doctors, and specialists in agriculture and animal husbandry.²²

Kiyotake's original plan had called for building a college of agriculture, mining, and engineering in Hokkaido, but too many foreign professors were required so the plan was scaled back. A team of Americans from the Massachusetts Agricultural College arrived in 1876, and the college became the model for the Sapporo Agricultural College.²³ The Sapporo College opened on Aug. 14, 1876, with 24 students. The curriculum was similar to the Massachusetts model, with students doing manual labor on the farm, scientific excursions, and military drill.²⁴ Overseeing the college was William Smith Clark, who spent eight months in Hokkaido. Under Smith, staple crops such as onions, corn, forage plants, and soybeans were introduced.

On his way home to Massachusetts, Smith took a boat from San Francisco, north to Astoria, Oregon, at the mouth of the Columbia River. He sought information about the salmon and herring industries that could be used in

²¹ John M. Maki, *William Smith Clark: A Yankee in Hokkaido* (Sapporo: Hokkaido University Press, 1996), 121.

²² Akizuki Toshiyuki, "American Professors in the Development of Hokkaido: The Case of the Sapporo Agricultural College." In *Foreign Employees in Nineteenth-Century Japan*, ed. Edward R. Beauchamp, and Akira Iriye (Boulder, San Francisco and London: Westview Press, 1990), 229.

²³ *Ibid.*, 230.

²⁴ Fumiko Fujita, *American Pioneers and the Japanese Frontier: American Experts in Nineteenth-Century Japan* (Westport: Greenwood Press, 1994), 97.

Hokkaido. His 12-page handwritten report recommended introducing "spring salmon" to Hokkaido, establishing a hatchery for spring salmon and salmon trout. A section described the techniques used on the Columbia, the canning process, and how profitable the salmon canning business could be. Smith thought the best market for Japanese fish would be England.²⁵ A second report provided plans for making fish-based oil and fertilizer.²⁶

The first Japanese salmon hatchery was built in 1877 in Sapporo, under the supervision of an American official. A second, the Chitose hatchery, was built in 1888, modeled on the Bucksport hatchery in Maine, and built under the supervision of Ichiryu Ito, who had been sent to the U.S. to study aquaculture. Within the next twenty years, some fifty salmon hatcheries were established in Hokkaido, most of them privately run.²⁷ Ito was part of the second wave of foreign expertise to reach Japan, through the young men sent abroad to study. They would bring the technology of the West, from the U.S., Britain, and Germany, back to Japan. In the case of fisheries, the new technology would be systematically implemented throughout the Japanese fishing fleet, substantially increasing its ability to catch fish.

The Meiji government experimented with strategies to find the best way to structure the fishing industry. In 1876, ownership of all fisheries reverted to the

²⁵ John M. Maki, *William Smith Clark: A Yankee in Hokkaido* (Sapporo: Hokkaido University Press, 1996), 191, 204.

²⁶ *Ibid.*, 205.

²⁷ The Japan Times and Mail, *Japan's Fisheries Industry 1939* (1939), 148.

central government, which permitted individual fishermen to pay a tax to catch fish. There was a wave of new entrants into the fisheries, often by highly capitalized merchants. During the next decade conflict intensified and an economic depression led to a drop in fish prices. Control reverted to local officials.²⁸

Other endeavors would be more successful, especially the decision to bring more Western fishing technology to Japan. Delegates were sent to international exhibitions, such as Vienna in 1871 and Philadelphia in 1876. Of special interest were the international fisheries exhibitions, such as Berlin in 1880 and London in 1883. The exhibitions acquainted the Japanese with modern processes in preserving and canning fish, in artificial propagation, as well as new kinds of boats and fishing gear.²⁹ Japan increased its fishing activity based on what it had learned from the West. One of the things its scientists undoubtedly learned at the 1883 London fisheries exhibition was T.H. Huxley's opinion that the seas were inexhaustible. But Huxley had also stated that he thought it was useless to try to control fisheries, something the Japanese had done with a great deal of success for many hundreds of years.

3.4 The Imperial Institute of Fisheries

Central to the expansion of fisheries was the expansion of research efforts in the ocean. Research efforts also began during the Meiji era. The *Fukuoka*

²⁸ N. Oka, H. Watanabe, and Akira Hasegawa, "The Economic Effects of the Regulation of the Trawl Fisheries of Japan" *FAO Fish Reports* 5 (1962): 178.

²⁹ F.A. Nicholson, *Note on Fisheries in Japan* (Madras: The Superintendent, Government Press, 1907), 9.

Gyogyoshi, or “Description of Fukuoka’s Fisheries,” identifying about 100 species of fish, was compiled in the 1870s.³⁰ The Hydrographic Department of the Imperial Navy was established in 1871 to make charts of ocean currents, tides, and depths in the coastal regions.³¹ The government also set up an extensive series of fisheries experimental stations and meteorological observatories. The fisheries experiment stations studied sea conditions and broadcast weather reports to the fishing industry. The marine meteorological observatories were engaged in ocean meteorology. The Central Meteorological Observatory conducted surveys of sea currents using a series of instruments placed along the Japanese coast.

The Fisheries Society of Japan was created 1882 to give direction to the general fishery activity in the country. In 1885, the Fisheries Bureau was inaugurated within the Ministry of Agriculture and Commerce. In 1890, the Fisheries Bureau established the Fisheries School for the training of technicians, while the government created the Committee of Investigation for Fisheries and the Investigation Station of Fisheries.³² The Fisheries School was reorganized into the Imperial Institute of Fisheries, located outside Tokyo. The curriculum was divided into three general areas, fishing, fisheries technology, and pisciculture. Study in each area took three years, and included all aspects of fishing, from

³⁰ Arne Kalland, *Fishing Villages in Tokugawa Japan* (Honolulu: University of Hawaii Press, 1995), 99.

³¹ The Japan Times and Mail, *Japan's Fisheries Industry 1939* (1939), 34.

³² *Ibid.*, 21.

navigation to gear development, canning and salting technology, and a wide range of aquaculture efforts aimed at increasing the cultivate of fishes and seaweeds.

The government also instituted a series of subsidies to encourage the development of fisheries. The Law for Encouragement of Deep-sea Fishing, which began the distant water program, was passed in 1887. The law recognized that expanded fisheries in deep water could pose a threat to inshore fisheries and the communities that depended on them. Their solution was to send fisheries offshore, and system of government subsidies was set up for sailing ships larger than 30 tons. By 1899 there were more than 3,000 locally built vessels employing 20,000 men.³³ Other subsidies included bounties to build sea-going vessels, rebates on the salt excise duty, rebates on the import duty on oil for canned goods, the establishment of closed periods for fishing, and protective measures for fishermen, including a program of weather warnings.³⁴ Additional bills were passed including the construction and improvement of fishing ports, installation of refrigeration equipment, and increased exportation of marine products.³⁵

F.A. Nicholson, a retired scientist who spent ten weeks touring Japanese fisheries in 1907 for the Indian government, wrote glowingly of all the Japanese had accomplished. He found them “imbued with the scientific spirit, liberal in

³³ Dietrich Sahrhage and Johannes Lundbeck, *A History of Fishing* (Berlin: Springer-Verlag Berlin Heidelberg, 1992), 179.

³⁴ F.A. Nicholson, *Note on Fisheries in Japan* (Madras: The Superintendent, Government Press, 1907), 40.

³⁵ The Japan Times and Mail, *Japan's Fisheries Industry 1939* (1939), 21.

necessary expenditure.”³⁶ There were 29 experiment stations, as well as a large network of fishery associations to carry out joint endeavors and resolve local territorial disputes. The Japanese did not merely accept the marine products at hand, Nicholson noted, but had the habit of “going out and searching for it and of following it up even at great risk and with frail boats in seas notoriously stormy, and on foreign and inclement shores.”³⁷

Other countries were making similar commitments to the study of marine biology during this period, stimulated by the declines in some fisheries, as well as the three-year voyage of the *Challenger*, which returned to England in 1875. The Stazione Zoologica was opened in Naples in 1875. A series of stations were opened in Scotland and England during the 1880s, along with a Canadian Biological Station in 1897. In the U.S., the Marine Biological Laboratory was opened in Woods Hole in 1888.³⁸ The Marine Biological Association (later the Scripps Institution of Oceanography) opened in San Diego in 1903. Also significant during this period was the creation of the International Council for the Exploration of the Seas (ICES) in 1902, driven by concerns over the falling fish harvests in the North Sea. The founding scientists hoped that joint investigations would offer the key to restoring fish population.³⁹

³⁶ F.A. Nicholson, *Note on Fisheries in Japan* (Madras: The Superintendent, Government Press, 1907), 1.

³⁷ F.A. Nicholson, *Note on Fisheries in Japan* (Madras: The Superintendent, Government Press, 1907), 3.

³⁸ Jennifer Hubbard, *A Science on the Scales: The Rise of Canadian Atlantic Fisheries Biology, 1898-1939* (Toronto: University of Toronto, 2006), 24-25.

³⁹ Helen M. Rozwadowski, *The Sea Knows No Boundaries: A Century of Marine Science Under ICES* (Seattle: University of Washington Press, 2002).

But despite the attention given by historians of science to the *Challenger* Expedition and British oceanography, Japan devoted far more resources to ocean science than any other nation. Research on ocean conditions and weather was integrated and offered to the fleets, along with detailed maps, information on fishing techniques, and processing advances. As Japan expanded its empire it set up research establishments in other countries. They established a central government fisheries institute at Fusan in Korea, with two branch stations and eleven provincial branches. There was a central government station at Formosa, with one branch and four provincial stations. Stations were built in Sakhalin and Palau, with three stations in Manchuria and at Dairen in Kwantung.⁴⁰

The Japanese had an integrated approach to fisheries. All aspects of fishing were taught, from the basic science of the fish and the environment, to catching them and ultimately processing and marketing them. The fisheries model was created by the government and integrated into policy and economic decisions. When rapid expansion of the fleet brought tensions inshore, the government moved to subsidize the building of larger boats that would send the fleets into more distant waters.

In his analysis of the Japanese fisheries in 1907, Nicholson quoted Hugh Smith, the U.S. Fish Commissioner, as saying that no other country had such a unique establishment, "in comprehensiveness of curriculum, completeness of

⁴⁰ Supreme Commander for the Allied Powers, "Summation of Non-Military Activities in Japan and Korea No. 5" (Tokyo: SCAP, 1946), 76.

equipment, and thoroughness of instruction.”⁴¹ Smith had been invited to speak, but after he had been shown around, he “felt exceedingly doubtful of my ability to impart any information,” Nicholson quoted.⁴²

But the rapid expansion of fishing in the waters around Japan soon brought signs of depletion. As early as 1894, observers noted a decline in the herring runs off Hokkaido. Gillnetters saw that stocks were being harvested too intensely by the mid-1890s. The solution was to prohibit newcomers into the district, but this early form of limited entry did not address the fishing practices that had led to the decline.⁴³

3.5 The Expansion and Westernization of Japanese Fishing, 1901-1941

After 1900, the Japanese government systematically modernized its fishing industry, funding the introduction of more Western fishing technology, including engines and fishing gear such as trawl nets. The government recognized that there were too many boats, leading to much conflict over fishing rights. The solution was to expand the fisheries outward, to the high seas, a decision that would be invoked by successive Japanese governments grappling with declining inshore catches, increased fishing capacity, and the desire to use fishing to establish territorial claims.

⁴¹ F.A. Nicholson, *Note on Fisheries in Japan* (Madras: The Superintendent, Government Press, 1907), 27.

⁴² *Ibid.*, 27.

⁴³ David L. Howell, *Capitalism from Within: Economy, Society, and the State in a Japanese Fishery* (Berkeley and Los Angeles: University of California Press, 1995), 106, 111.

The modernization push came with the 1901 fisheries law. Fishing rights were categorized into those for capture fisheries, beach seines, set nets, and mariculture. The new law incorporated the feudal idea of all members having to follow strict local regulations, fishing zones, and seasonal limits. It took the old guilds as its administrative nucleus and designed them as Fisheries Associations, charged with managing the fisheries by issuing licenses within the sea territory of a village or group of villages. But the law did little to alleviate the economic plight of small scale fishermen, who were at the mercy of middlemen and wholesale fish dealers.⁴⁴

The expansion into the high seas had begun in 1893, when the Japanese entered the hunt for the North Pacific fur seals.⁴⁵ After defeating Russia in the 1905 war, Japan won substantial fishing concessions off Sakhalin Island and Kamchatka. Government resources poured into fisheries, funding the introduction of Western technology, including engines and fishing gear such as trawl nets.

The father of the modern Japanese fishery was born to a samurai family in 1887. Kosuke Kunishi traveled to Britain and Germany, working as a sailor and fisherman on a trawl vessel, and bringing the technology back to Japan.⁴⁶ Another samurai, Kamezo Okuda, traveled to England in 1902 to study British trawl methods. When he returned, he built the 152-ton *Kaiko Maru*, inaugurating

⁴⁴ N. Oka, H. Watanabe, and Akira Hasegawa, "The Economic Effects of the Regulation of the Trawl Fisheries of Japan" *FAO Fish Reports* 5 (1962).

⁴⁵ Kurkpatrick Dorsey, *The Dawn of Conservation Diplomacy: U.S.-Canadian Wildlife Protection Treaties in the Progressive Era* (Seattle: University of Washington, 1998), 144.

⁴⁶ The Japan Times and Mail, *Japan's Fisheries Industry 1939* (1939), 101.

Japanese trawling with European methods.⁴⁷ A British trawler was imported in 1908, and the government paid to build a copy of the vessel. Trawling expanded rapidly, reaching 136 boats by 1912. There were serious conflicts with the inshore fishermen, prompting the government to establish large closed areas in coastal waters and to halt subsidies to trawlers under the promotion law. This forced the trawlers into the East China Sea, where the colonial administration in Korea immediately established large closed areas, pushing the fishery further offshore.⁴⁸

With the widespread introduction of powered vessels (also subsidized by the government), there were additional conflicts with the inshore and coastal fishermen. By the 1920s the number of powered trawlers exceeded 2,000, prompting the government to issue a new set of regulations to control expansion and reduce conflicts.⁴⁹ The speed of change is suggested in a 1954 study of Takashima, a fishing village in the Okayama Prefecture, on the Inland Sea. The village had 33 families and 26 were involved in fishing. The first motorized fishing craft were bought in 1924 and by 1926, almost every household either acquired a new motored craft or had a motor installed in boats formerly propelled by sail.⁵⁰ But while modern methods were quickly incorporated, some traditional fishing patterns were slow to change. The prefecture government had to approve the

⁴⁷ Ibid, 67.

⁴⁸ Hiroshi Kasahara. "Japan's Distant Water Fisheries: A Review." *Fishery Bulletin*. 70 (2) (1972) 227-282. 130.

⁴⁹ Hiroshi Kasahara. "Japanese Distant-Water Fisheries: A Review" *Fishery Bulletin* 70, no. 2 (1972): 230.

⁵⁰ Edward Norbeck. *Takashima, a Japanese Fishing Community* (Salt Lake City: University of Utah Press, 1954), 19.

operation of all kinds of nets and fishing equipment. All boats were licensed, and the prefecture limited the number of boats on the Inland Sea, where there were concerns about overfishing.

Japan began canning king crab (*Paralithodes camtschaticus*) in 1905, and pioneered the canning of crab at sea, starting in 1914. By 1927, the techniques were being applied to salmon.⁵¹ A further round of subsidies came in 1923, encouraging the construction of refrigeration plants, refrigerated boats, and ice-making systems, designed to carry Japanese fishing products to other countries.⁵² Fishing companies were gradually consolidated into larger companies that monopolized the northern fishery, which had become an important source of foreign currency. An aggressive expansion deeper into the Pacific Ocean began in the 1930s. Antarctic whaling began in 1934.

Between 1908 and 1941, the annual fish production, including Antarctic whaling, increased by more than seven times. Production was a little more than a half-million metric tons in 1908, and increased to more than 4 million mt by 1933. During the period 1930-41, the catch averaged 4.1 million mt. Whaling activities sharply increased during the last half of the 1930s, pushing the catch to its pre-war peak of almost 4.9 million mt in 1941. By the middle of the 1930s, Japan has pulled past the United States and become the world's leading fishing nation, out

⁵¹ Dietrich Sahrhage and Johannes Lundbeck, *A History of Fishing* (Berlin: Springer-Verlag Berlin Heidelberg, 1992), 291.

⁵² Georg Borgstrom. *Japan's World Success in Fishing* (London: Fishing News (Books) Ltd., 1964), 63.

fishing the U.S. by more than 2 million mt annually.⁵³ Fishing showcased Japan's modernization and its industrialization. The result would be a sharpening of conflict over who owned the fish in the high seas.

3.6 The Northern Ocean Fishery and International Tensions, 1905-1938

Japan's North Ocean Fishery was one of the most profitable fisheries in the world, targeting the enormous pink and chum salmon runs on the Asian side. The most abundant of the five species of Pacific salmon, pinks spawn in the large river valleys of the west coast of Kamchatka, and in the short, shallow rivers of Sakhalin Island and the Kuriles. There are also large runs of chums that range from northern Korea to the Arctic coast of Siberia. The largest Asian chum runs are on the west coast of Kamchatka, the north coast of the Okhotsk Sea and the Amur River.⁵⁴ The fishery also targeted king crab, which the Japanese began canning for export in 1905. In an effort to improve the efficiency of the catching and canning of salmon and crab, the Japanese began using motherships to carry smaller catcher boats to the fishing grounds. The smaller boats would catch the salmon or crab, then transfer it to the motherships for processing. The crab fishery expanded north from Hokkaido to Sakhalin, then to the northern Kuriles.⁵⁵ The salmon fishery increasingly operated in the high seas,

⁵³ Salvatore Comitini, "A Sectoral Study of the Economic Development of Japanese Fisheries Exploitation" Ph.D. Dissertation, University of Washington, (1960). 41.

⁵⁴ C. Groot and L. Margolis, *Pacific Salmon: Life Histories* (Vancouver: UBC Press, 1961).

⁵⁵ Hiroshi Kasahara, "Japanese Distant-Water Fisheries: A Review" *Fishery Bulletin* 70, no. 2 (1972): 240.

using large nets that intercepted the salmon before they could return to their natal streams to spawn. Once again, the increased efficiency of the fleet would create strains on the inshore fishermen, both in Japan, but also with Russia.

In the Russo-Japanese Treaty of 1875, by which Russia exchanged the Kurile Islands for Sakhalin, the Japanese were given most-favored-nation treatment regarding fishing off Kamchatka. In the Treaty of Portsmouth, negotiated in 1905 under the leadership of President Theodore Roosevelt, Sakhalin was partitioned at the 50th parallel.⁵⁶ The Japanese obtained the right to fish in Russian waters along the Pacific coast, and methods of exercising the right of lease of fishery lots were provided in the Convention of 1907. The fisheries convention gave Japan additional fishing rights in Russian waters, and brought the southern half of Sakhalin Island under Japanese control once more. Japan was allowed to fish along the Russian coasts of the Japan Sea, the Okhotsk Sea, and the Bering Sea, including the entire coastline of Kamchatka, the most important salmon region in Asia. A large number of lots for salmon trap fishing were also distributed, by auction, between the Japanese and the Russians.⁵⁷ The special Fisheries Convention had a provision that called for renewal after twelve years. Under the convention, river estuaries and bay were ceded to the Russians, while the Japanese were free to fish in the open sea. They were allowed to lease land for processing facilities and the first Japanese fishing base opened in Kamchatka in 1907.

⁵⁶ John J. Stephan, *Sakhalin, a History* (Oxford: Clarendon Press, 1971), 80.

⁵⁷ Hiroshi Kasahara, "Japanese Distant-Water Fisheries: A Review." *Fishery Bulletin* 70, no. 2 (1972): 238.

When this convention expired in 1919, Japan continued fishing without benefit of formal agreement until 1924, when a temporary agreement concerning fishing rights was signed by the two countries, pending the conclusion of the treaty in which Japan recognized the new government of what was now the Union of Soviet Socialist Republics (USSR). The treaty was signed in January 1925, agreeing that the Portsmouth Treaty was held to be still in force and the Soviet Union specifically recognized Japan's right to fish in its waters. It was agreed the two countries should work out a new fishery convention, which was signed in 1928. The annual auctioning of fishing lots was continued. Fishing in the mouth of rivers and streams was restricted to Soviet citizens and some 37 bays and gulfs were likewise exempted from the provisions of the treaty.⁵⁸

The 1925 treaty called on the Japanese to withdraw from Northern Sakhalin, but they retained rights to exploit minerals and forests, as well as fish. Japan developed the oil and coal in northern Sakhalin under concessions that were to last for 45 years, paying a royalty of between five and fifteen percent to the Soviets. During the next decade, the island underwent extensive colonization and development.⁵⁹ But the development of the coal and oil reserves was a constant source of tension. Russia needed the fuel for its five-year expansion

⁵⁸ Homer E. Gregory and Kathleen Barnes, *North Pacific Fisheries* (San Francisco and New York: American Council, Institute of Pacific Relations, 1939), 289.

⁵⁹ John J. Stephan, *Sakhalin, a History* (Oxford: Clarendon Press, 1971), 111.

plans, but the Japanese needed it for its growing involvement in Manchuria and China. And after 1935, Japan showed signs of reviving the question of northern Sakhalin's territorial sovereignty.⁶⁰

3.7 Tension with the Soviet Union

While a fishery treaty had been signed, it did not ease tensions. The 1928 treaty did not settle the exchange rate between the yen and ruble, setting up an annual squabble over how much each currency was worth. There was a difference between the official value of the ruble and its value on the open market. Another difficulty was the annual leasing of lots, which made it difficult for Japanese companies to forecast the extent of their fishing territory. In the early years, the Japanese controlled most of the leases, but by 1930, leases were divided almost equally.⁶¹ Tensions escalated, and Russia began to seize Japanese boats on the grounds of illegal entry into territorial waters. In 1933, three members of a Japanese crew were killed after they were apprehended in Siberian waters, where they claimed to have been driven by bad weather.⁶²

The high-seas salmon fishery that began in 1931 was spectacularly successful, because it intercepted the salmon before they returned to their home streams to spawn. The total value of the northern catch was 1.2 million yen in 1931 and it grew to 12 million yen by 1934. Much of the crab catch was exported

⁶⁰ Ibid., 131.

⁶¹ Barbara Wertheim, "The Russo-Japanese Fisheries Controversy" *Pacific Affairs* 8 no. 2 (1935): 190.

⁶² Ibid, 193.

to the U.S. and to Britain; Britain was the main market for Japanese canned salmon. The northern fish catch provided Japan with approximately 30 million yen a year.⁶³

The high seas fishery was no sooner celebrated than there were indications of salmon depletion. By 1934, the average size of the fish was smaller than had ever been recorded, and the on-shore boats and canneries complained they did not get enough fish. The glut of canned salmon caused a decline in prices and the Japanese government passed a regulation to curtail the at-sea fisheries by 30 percent during 1936, and a reduction in the number of motherships to 300 from 313.⁶⁴

The North Ocean Fishery also reflected a pattern seen in other Japanese industries, the consolidation of companies. At one time there were more than 100 small companies operating in the northern waters, but they were gradually merged into bigger companies until by 1931 the number had been reduced to thirty. By 1933 all the smaller companies were merged into the Nichiro Fishery Company. The other large company, Nippon Suisan, was a subsidiary of Yoskisque Aikawa's Nissan company, known as the Manchuria Heavy Industry Corporation. It was organized in 1937 through amalgamation of several other companies, including the Nippon Whaling Company. It monopolized the crab

⁶³ K.B., "Japan May Extend Fisheries in Chinese Waters" *Far Eastern Survey* 6, no. 25 (1937): 293-294.

⁶⁴ Barbara Wertheim, "The Russo-Japanese Fisheries Controversy" *Pacific Affairs* 8 no. 2 (1935): 196.

canning on the motherships in northern waters and owned most of the cold storage equipment, as well as controlling the trawl fishery in the high seas off Kamchatka.⁶⁵

The motherships were industrial-scale operations that depended on cheap labor to undersell fish from other countries, especially the United States. The working conditions on the factory ships were dismal and the pay was low. The working day on the factory ships often began at 3 or 4 a.m. and would go until the catch was cleaned and canned. There was strict work discipline and boats had to meet a quota. Conditions were no better in canneries the Japanese established in Kamchatka. The government urged reform of the 21-hour work days, poor food, poor sanitary conditions, and a wage structure that encouraged workers to remain on the job even if they were ill.⁶⁶

Conditions may have been poor, but by the 1930s the work was badly needed by the 20,000 workers in the North Ocean fleet. Most came from small farming and fishing villages in the northern district of Honshu, and worked seasonally on the ships from May to September, earning 200 yen per season, at a time when a typical peasant family had an income of a little over 500 yen a year.⁶⁷

⁶⁵ Nagaharu Yasuo, "The North Ocean Fishery in Japan's Economic Life" *Far Eastern Survey* 8, no. 9 (1939): 107.

⁶⁶ David L. Howell, *Capitalism from Within: Economy, Society, and the State in a Japanese Fishery* (Berkeley and Los Angeles: University of California Press, 1995), 144-145.

⁶⁷ Nagaharu Yasuo, "The North Ocean Fishery in Japan's Economic Life" *Far Eastern Survey* 8, no. 9 (1939): 106-108.

It was partly the low wages paid to fishermen and processing workers that allowed Japanese fish to compete in other markets. As early as 1920, the pages of the Seattle-based *Pacific Fisherman* sounded the alarm at low-cost imports of Japanese salted cod. The trade papers declared that the American cod fishing industry was in danger of extinction “through the invasion of American markets by Japanese codfish, produced by coolie labor at practically one-tenth the cost of the American product.”⁶⁸ Lower priced tuna would follow in 1926, prompting an American tariff against Japanese fish in 1934.

The Japanese fishing industry was also increasingly subsidized by the government, especially as operations developed in the waters of other countries. A series of subsidies began in 1923, encouraging the construction of refrigerators, refrigerated boats, and ice-making systems, allowing Japanese boats to carry their fish to other countries.⁶⁹ Japan was now the largest fishing nation in the world and the U.S. was second. During 1931-38, when fishing was at its peak, Japan’s aggregate annual production ranged from 3.5 million metric tons to 4.5 million metric tons. The U.S. catch, combined with Alaska, was less than 2.5 million metric tons a year.⁷⁰

The Japanese industrialized their fishing industry earlier and more thoroughly than any other nation. The government actively subsidized the building of fishing boats, helping countries finance large, sea-going fishing boats

⁶⁸ “Japanese Invade American Codfish Industry” *Pacific Fisherman*, December, 1919: 23.

⁶⁹ Georg Borgstrom. *Japan’s World Success in Fishing* (London: Fishing News (Books) Ltd., 1964), 63.

⁷⁰ Ada Espenshade, “A Program for Japanese Fisheries” *Geographical Review* 39, no. 1 (1949): 76.

and motherships. While British fishing smacks were traveling to Iceland in the 1930s, they hauled their catches back to shore for processing. The American tuna clipper developed during this period, but again, catches were brought to Southern California for processing. The revenue from both whaling and the northern Pacific fishery brought Japan needed revenue at a time when it had few sources of foreign capital. The fishing industry was a highly visible sign of Japan's modernization and industrialization.

3.8 The Expansion of Japanese Trading

The 1930s were a time of enormous trade expansion for Japan. Japan accelerated trade with India, the Dutch Indies, and the British colonies of East Asia. As many countries, including Britain and United States, erected trade barriers during the 1930s, Japan moved into markets in Latin and Central America. Exports to Central America increased from 3 million yen in 1931 to 41 million by 1936. South American trade increased from 10 million yen to 69 million during the same period.⁷¹ At the same time, the world-wide depression and the erection of trade barriers by many countries hurt the Japanese economy. As the war in Manchuria expanded, Japan was increasingly dependent on earnings from the sale of such items as canned salmon (primarily sent to Britain) and crab (sent into the United States).

⁷¹ Jon Halliday, *A Political History of Japanese Capitalism* (New York: Pantheon Books, 1975), 128.

With the consolidation of fishing companies into several large conglomerates, fishing continued to expand. The Japanese steam trawler *Minato Maru* arrived in Mexican waters in January of 1936, operated by the Kyodo Fishery Co., a subsidiary of the Japanese Industry, Co., part of Mitsubishi. Catches were to be marketed in Central America or Japan.⁷² Actual fishing operations involved Nippon Suisan and Hayashikane Shoten Co., which sent a fleet of about 10 large trawlers and two smaller ones to the Gulf of California to fish for prawns, which would be frozen and sold in the U.S. Kyodo also established a branch in Buenos Aires in 1937, and sent a reconnaissance fleet to the north and west coasts of Australia, exploring the Gulf of Carpentaria to Freemantle. Vessels also explored the Bay of Bengal.⁷³

Japan had always been involved in coastal whaling, but it moved into high seas pelagic whaling in 1934. Instead of developing the technology itself, Nippon Suisan bought a Norwegian whaler and sent it to Antarctica. A new ship was built for the 1936 season, followed by five more by 1939.⁷⁴ Nippon Suisan owned the fleet and whaling quickly became an important source of foreign currency, as well as food supply for the Japanese armed forces.⁷⁵ The 1938 harvest was a record

⁷² "Japanese to trawl off Mexican coast," *Pacific Fisherman* February, 1936: 40.

⁷³ Georg Borgstrom, *Japan's World Success in Fishing* (London: Fishing News (Books) Ltd., 1964), 253.

⁷⁴ The Japan Times and Mail, *Japan's Fisheries Industry 1939* (1939), 82.

⁷⁵ George L. Small, *The Blue Whale* (New York: Columbia University Press, 1972), 152.

7,500 whales that produced some 80,000 tons of oil, sold in London and Hamburg.⁷⁶ The entry of Japan into Antarctic whaling drew the disapproval of Norway and Britain, which had historically dominated whaling.

Japanese fishing had also expanded southward. They had been fishing in Manila Bay since the 1900, and had become dominant in fisheries throughout the Philippines, Malaya, and the Dutch East Indies.⁷⁷ In 1914, having declared war on Germany, Japan seized German installations and investments in the Chinese province of Shantung, and occupied the German island possessions in the Western Pacific, the Mariana, Palau, Caroline, and Marshall Island groups.⁷⁸ By 1923, the Japanese were catching 150,000,000 kg of tuna, worth 25,000,000 yen, and had begun to catch fish “in great quantities” in Hawaiian waters and in Southern California.⁷⁹ By 1938, an estimated 391 boats would be fishing for tunas and bonita in the islands, shipping the fish to Japan for processing.⁸⁰

Japanese tuna began finding its way into the world’s largest tuna market by 1926. Trade between the U.S. and Japan was deepening; by 1928, the United States was taking more than two-fifths of Japan's exports (largely raw silk) and furnishing Japan with a third of its imports.⁸¹ The cheaper Japanese fish hit West Coast tuna fishermen very hard, especially after 1931, when the Japanese

⁷⁶ The Japan Times and Mail, *Japan's Fisheries Industry 1939* (1939), 82.

⁷⁷ Albert W. C. T. Herre, “Japanese Fisheries and Fish Supplies” *Far Eastern Survey* 12, no. 10 (1943): 101.

⁷⁸ W.G. Beasley, *Japanese Imperialism, 1894-1945* (Oxford: Clarendon Press, 1987), 154.

⁷⁹ Kamakichi Kishinouye, “Contributions to the Comparative Study of the So-Called Scombroid Fishes” *Journal of the College of Agriculture, Imperial University of Tokyo* No. 3 (1923): 293-475.

⁸⁰ Wilbert M. Chapman papers, University of Washington, Box 38, Folder 1, “The Tuna Fishery in the Mandated Islands,” by M.B. Schaefer, December, 1946.

⁸¹ John Curtis Perry, *Facing West: Americans and the Opening of the Pacific* (Westport: Praeger, 1994), 190.

began to can tuna themselves, instead of sending frozen meat to the U.S. for canning. American consumers bought the cheap Japanese tuna and the prices paid to U.S. fishermen plummeted. Boats were tied up in San Diego and San Pedro.

The situation was so bad for American fishermen the U.S. Tariff Commission did an investigation and issued a report in 1934. It recommended that the duty on imported tuna be increased to 45 percent ad valorem, from the previous 30 percent. The Commission found that imports in 1931 were 937,000 pounds, but the figure jumped to 5.9 million pounds the following year, about a quarter of the California production. The value of the yen had dropped, giving the fish an additional boost. A case of Japanese tuna, packed in oil, sold for \$3.55 a case, where American tuna cost \$5.08 to produce.⁸²

The tariff action only covered tuna canned in oil; there was no tariff on frozen tuna coming into the country, and American canners were increasingly buying Japanese frozen tuna because it was cheaper than fish produced by American boats. The canners could buy Japanese tuna for \$20 to \$30 a ton in Japan and land it in the U.S. at a total cost of \$70. American boats wanted \$100 a ton for the fish.⁸³ The tariff increase helped with canned tuna, but it was obvious that the Japanese would be increasing the amount of frozen tuna they would be shipping into the U.S. market.

⁸² American Tuna Association Files, Box 18, Folder, "U.S. Tariff Commission Report to the President, Fish Packed in Oil." Oct. 30, 1933. Scripps Institution of Oceanography Archives, La Jolla, CA.

⁸³ *Pacific Fisherman* 32, no. 1 (1934): 18.

3.9 The Japanese and Bristol Bay

Japan's push to dominate regional fisheries drew stiff resistance. China had complained since 1912 of Japanese fishermen in its territorial waters.⁸⁴ Australia was unhappy over a fleet of Japanese pearl boats in the Arafura Sea, in defiance of customs, immigration and quarantine acts.⁸⁵ The Japanese were sensitive to criticism of its fisheries and whaling policies. As the editors of *The Japan Times & Mail* put it:

It would be seriously wrong, however, to regard this development of the industry simply as a result of abuse of natural resources under the so-called depredation method. The different laws and regulations on marine industry, well appointed provisions for experiments on marine products and for necessary instruction, testify to the protective measures for resources taken and the maintenance of strict order in the industry. These provisions eloquently speak for the organization and control that have helped this undertaking to pursue a normal growth.⁸⁶

But the real showdown over Japan's increasingly global fishing policy would come with the Americans over access to Bristol Bay sockeye.

The rapid expansion of Japanese fishing in the North Pacific was running into trouble. The Japanese catch increased from \$101 million worth of salmon in 1934 to \$136 million by 1939.⁸⁷ There was growing concern in Russia that the floating canneries were catching fish before they entered the coastal waters, destabilizing the coastal communities dependent on fishing. After the

⁸⁴ K.B., "Japan May Extend Fisheries in Chinese Waters" *Far Eastern Survey* 6, no. 25 (1937): 293-294.

⁸⁵ "Japanese Eye North American Fisheries," *Pacific Fisherman* July, 1936, 24.

⁸⁶ The Japan Times and Mail, *Japan's Fisheries Industry 1939* (1939), 82.

⁸⁷ Larry L. Leonard, *International Regulation of Fisheries* (Washington D.C.: Columbia University, 1944), 127.

consolidation, several of the floating canneries were retired from fishing on the Siberian coast. The company approached the Japanese Diet to issue licenses that would allow the boats to fish in the Bering Sea. The Japanese government refused the 1935 request.

But the following year, a glut of canned salmon caused a decline in prices and the government passed a regulation to curtail its at-sea fisheries by 30 percent, and to reduce the number of motherships from 313 to 300. Once again, the companies asked the government for permission to fish in Bristol Bay, and this time the government agreed. The Diet appropriated 89,000 yen (about \$74,760) for a three-year investigation of Alaskan fisheries, to study the biological aspects of the salmon fishery and its “possible effect as to international relations and also to determine what effect the floating canneries have on the shore packing.”⁸⁸

Japanese mothership fleets had been fishing in Bristol Bay, considered international waters, since the early 1930s. Their fleet of catcher boats caught king crab and transferred it to the motherships, where it was canned for export to the U.S. and Great Britain. Trawling for Alaska pollock (*Theragra chalcogramma*) and other demersal fish had begun in 1933.⁸⁹ Two fish meal factory ships

⁸⁸ Larry L. Leonard, *International Regulation of Fisheries* (Washington D.C.: Columbia University, 1944), 128.

⁸⁹ Dietrich Sahrhage and Johannes Lundbeck, *A History of Fishing* (Berlin: Springer-Verlag Berlin Heidelberg, 1992), 186.

operated between 1933 and 1937, but the fishery was not profitable.⁹⁰ A fisheries training vessel also visited Bristol Bay each season, doing research on the Bay's fishery resources.

By comparison with the scale of the Japanese fisheries, American fishing in Bristol Bay was limited. There was no at-sea research. American fishing was limited to a brief season each year for salmon, lasting from two to six weeks. There had been no substantial American efforts to harvest king crab or to trawl for bottom fish. The Americans limited fishing in Bristol Bay to 32-foot sail boats, as a conservation measure. The Alaskan fishery was the most lucrative in the country and the prospect of Japanese fishing on Bristol Bay sockeye became a rallying cry for the entire West Coast, from Alaska to Oregon.

Japan had plans to continue its fishery expansion. According to the *Japan Year Book* for 1936, Japanese floating crab canneries and motherships had opened the northern seas, but there were still "vast undeveloped areas in the Behring Sea, the Sea of Okhotsk, the South China Sea, the Gulf of Siam, and even in the Southern Pacific, so that the future for pelagic fishery for Japan is bright and of great importance to her."⁹¹

When Japan began its modernization process after the fall of the last Shogun in 1868, one of the areas where the government decided to concentrate resources was the fishing industry. As part of the modernization process, Japan

⁹⁰ Hiroshi Kasahara, "Japanese Distant-Water Fisheries: A Review" *Fishery Bulletin* 70, no. 2 (1972): 234.

⁹¹ Kathleen Barnes, "The Clash of Fishing Interests in the Pacific" *Far Eastern Survey* 5, no. 23 (1936): 243-247.

brought aquaculture technology from the United States, and fishing technologies from Germany and England. An aggressive expansion of fishing throughout Southeast Asia and north of the Soviet Union followed. Japan's high seas fisheries expanded more quickly than the fleets of any other country during this period, as Japan pioneered high-seas processing of crab and salmon. Japanese fishing imperialism brought it into conflict, first with the Soviet Union, and then with the United States in 1938. The source of tension in both conflicts was the enormously valuable salmon of the North Pacific Ocean.

By 1937, Japan was the world's leading fishing nation. Its network of fisheries was spread throughout the Pacific, and into the Indian and Atlantic oceans. The objectives of the "aquatic products industry" were to guarantee fishermen a stable livelihood and to improve the health of the nation by providing a supply of fresh protein. The development of overseas fishing and the export of fisheries products were considered extremely important to the health of the Empire. The Japanese were proud of their fisheries development, and the research that furthered the country's accomplishments. "The perfect cooperation among the aquatic industrial experimental stations...is unheard of in other countries," wrote the *Japan Times & Mail* in 1939.⁹² While fishery institutes in other countries only concentrated on the deep-sea, Japan had a far more extensive and expansive scale of fishery education, drawing requests for information from scholars in other countries.⁹³

⁹² The *Japan Times and Mail*, *Japan's Fisheries Industry 1939*, 35.

⁹³ *Ibid*, 15.

For the United States, Japan's fishing industry was not only a threat to the Bristol Bay salmon, but low-cost Japanese tuna had the potential once again to crowd American tuna off the grocery store shelves. The conflict between Japan and the United States over the fisheries of the Pacific was complicated from the start, because it was always about more than just catching the fish.

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Chapter Four

The Confrontation at Bristol Bay

It is true they don't carry the American flag on their backs to command our protection. But they were born in our waters. Our taxpayers spend their money conserving them. Our fishermen each year have sacrificed immediate profits in order to conserve them. We should no more be willing to submit to their destruction than we should be willing to submit to foreign destruction of any other of our property.¹

Washington Senator Lewis B. Schwellenbach, 1938

Until the 1930s, the critical fisheries events that drove the development of international law happened in the Atlantic Ocean, most often in the North Sea, where nations had been fishing together for hundreds of years. But starting in 1930, with the rapid expansion of distant water fisheries, events in the Pacific began to drive the development of international law and fisheries policy. By 1945, these conflicts had driven fishery questions to the forefront of foreign policy concerns, not only in Japan and the United States, but also in several Latin American nations, as well as Britain, Norway, and Iceland. As the fishing fleets became more industrialized, catches increased and scientific concern mounted that T.H. Huxley had been wrong about the inexhaustibility of the great sea fishes.

With advances in refrigeration, larger boats, and larger engines, more countries were getting involved in distant water fishing. British, French, and German boats fished off Iceland, Greenland, and Newfoundland. But the greatest

¹ L. Larry Leonard, *International Regulation of Fisheries* (Washington: Columbia University Press, 1944), 133.

expansion was in the Pacific, where Japanese fishermen ranged as far south as Australia, as far east as the Indian Ocean, west to Mexico, and north to the Bering Sea, drawing a host of complaints in the wake of their nets and long lines of hooks. Americans had developed fisheries in Alaska's Bristol Bay for salmon, and at Cape Spencer for halibut, for cod off Newfoundland and Nova Scotia, and for shrimp in the Gulf of Mexico. But it was the American tuna boats, with their cork-lined insulated hulls, traveling 2,000 miles from San Diego to Mexico, Peru, Costa Rica, and on to the Galapagos, in search of baitfish, that were drawing the most complaints.

Countries with the capacity to industrialize fishing were able to fish where they wanted, because fish were a free resource until they were captured and became the property of fishermen. Countries with little industrial capacity, such as Latin American nations and Iceland, fumed at the lack of legal recourse.

The League of Nations made an attempt in 1930 to resolve the escalating controversies. There was an extensive body of law on inland and coastal fisheries. There were high seas treaties that protected fur seals in the North Pacific, and the United States and Canada had signed a convention in 1923 to regulate the Pacific halibut fishery.² But the question of the width of the territorial sea was not settled, as the fishing controversies showed. The League held a Codification Conference but it failed to reach agreement.

² A. P. Daggett, "The Regulation of Maritime Fisheries by Treaty" *The American Journal of International Law* 28, no. 4 (1934): 703.

A League subcommittee sent nations a series of questionnaires, seeking input on what issues needed international agreement. The final question included territorial waters, but not the question of the use of the products of the sea. As the committee wrote, this was an attempt to somehow untangle the economic, biological, and commercial questions that were inherent in distant water fishing. The conference drew up a draft convention, which was not adopted.³ The Codification Conference was the first group to attempt to separate the issues of territorial claims from issues of fishing. But the issues were stubbornly linked, especially when it came to the high seas resource of the Pacific Ocean, and the growing interest in harvesting high-seas tunas.

4.1 The Ecosystem of Tuna

There are 14 species of Thunnini within the family of Scombridae. Tuna live in tropical and temperate latitudes of the Atlantic, Pacific, and the Indian oceans. They wander the open seas, mostly in the upper layer of the ocean's waters, where the water is warmed by waves driven by the wind.⁴ There are approximately 58 species of tuna and related fish in the family, which also includes billfish, bonitos, swordfish, and mackerel. The largest species are marlins and bluefin tuna. They are unique among fish; while they are related to salmon, the two species are separated by approximately 100 million years of

³ Ibid, 693.

⁴ James Joseph, Witold Klawe, and Pat Murphy, *Tuna and Billfish: Fish Without a Country* (La Jolla: Inter-American Tropical Tuna Commission, 1988), 3.

evolution.⁵ While there are numerous species of tuna, the principle market fish, or tunas of commerce, are skipjack, (*Katsuwonus pelamis*), yellowfin (*Thunnus obesus*), bigeye (*T. albacares*), northern and southern bluefin (*T. thynnus*), and albacore (*T. albacares*).

It was not until the 20th century that people developed the skills and technologies to follow tuna through the oceans. Maritime countries had always taken a few tuna in local fisheries, but they lacked the boats and fishing gear to follow the great fish as they migrated through the oceans. Tuna were dubbed wandering fish in 1757 by the Spanish cleric Fray Martin Sarmiento.⁶ Tuna never stop swimming, endlessly traveling in the upper layers of the temperate and tropical oceans, although more than half of the catch are taken in the central and western Pacific Ocean.⁷ Tuna are biologically very advanced, with circulatory and respiratory systems that are unique among fish. The circulatory system is designed to conserve or to dissipate heat as needed. Tuna usually maintain a body temperature that is higher than the temperature of the water in which it swims, and their circulatory system is designed to dissipate heat. The fish have a high metabolic rate and they swim constantly to keep their gills supplied with oxygenated water.⁸

⁵ Keith E. Korsmeyer and Heidi Dewar, "Tuna Metabolism and Energetics" in *Tuna: Physiology, Ecology, and Evolution*, ed. E. Donald Stevens, Barbara A. Block (New York: Academic Press, 2001), 38-39.

⁶ James Joseph, Witold Klawe, and Pat Murphy, *Tuna and Billfish: Fish Without a Country* (La Jolla: Inter-American Tropical Tuna Commission, 1988), 1.

⁷ Carl Safina, "Tuna Conservation" in *Tuna: Physiology, Ecology, and Evolution*, ed. E. Donald Stevens, Barbara A. Block (New York: Academic Press, 2001), 414-457.

⁸ James Joseph, Witold Klawe, and Pat Murphy, *Tuna and Billfish: Fish Without a Country* (La Jolla: Inter-American Tropical Tuna Commission, 1988), 6.

Biologists call tuna energy speculators, because they are able to invest large amounts of energy based on a payoff when they capture food. When they need it, tuna have the capacity for increased levels of oxygen uptake, delivery, utilization, and, consequently, work, allowing them to carry out many metabolic functions faster than other fish. When tuna encounter their prey, they go into a feeding frenzy. Pole and line fishing for tuna, the technique that Americans adopted from the Japanese, involves throwing live bait into the water to attract the fish. When tuna are in a feeding frenzy, they will strike bare hooks, allowing fishermen to land them.

The Japanese pioneered the study of tuna. Kamakichi Kishinouye, writing in 1923, cites the work of E. Kaibara and his natural history of Japan, written in 1708. Kishinouye himself began studying tunas in 1911; he called them the “the most specialized form of the bony fishes with many distinctive characters, hitherto unknown to science.”⁹ Kishinouye’s work was published, in English, by the College of Agriculture at the Imperial University in Tokyo in 1923. The Japanese Research Council also began publishing data on oceanography, in English, in 1928.¹⁰ The Japanese were proud of their pioneering work in fisheries and oceanography, and sought to publicize it.

It was Kishinouye who first suggested the link between the tuna’s vascular anatomy, activity level, and high body temperature. He provided basic

⁹ Kamakichi Kishinouye, “Contributions to the Comparative Study of the So-Called Scombroid Fishes” *Journal of the College of Agriculture, Imperial University of Tokyo* No. 3 (1923): 293-475.

¹⁰ The Committee on Pacific Oceanography of the National Research Council of Japan, *Records of Oceanographic Works in Japan* 1 (1928).

information about the biology of tuna, as well as a comparison of their various body systems. His extensive paper contained large color plates and line drawings of tuna vascular anatomy, accompanied by written descriptions of other structural details. Based on his study, Kishinouye proposed placing tunas in their own order, the *Plecostei*, to distinguish them from other fishes. It was not done, but some scientists understand why Kishinouye thought a new order was justified.¹¹

4.2 The American Fishery for Tuna

“Like a page torn from a thrilling tale of adventure was the March trip of the tuna clipper “*Navigator*” to Cocos Island, long linked with yarns of buried treasure, off the coast of Costa Rica,” *Pacific Fisherman* wrote breathlessly in the April, 1930 issue. The *Navigator*, out of San Diego and captained by Manuel K. Freitas, had discovered a vast and virgin school of yellowfin tuna, “fish that were ravenously hungry; fish which did not know of fishermen’s lures, but snapped at the strange white feather jigs as at luscious morsels.”¹²

The Depression was a difficult time for many fishermen, as prices fell and markets contracted. In California, however, the tuna fishery was booming. By March of 1930, construction was complete on the most modern Fisherman’s Wharf in the country, at the foot of “G” Street in downtown San Diego. It could

¹¹ Bruce B. Collette, Carol Reeb, Barbara A. Block. "Systematics of the Tunas and Mackerels (Scombridae)" in *Tuna: Physiology, Ecology, and Evolution*, editors E. Donald Stevens, and Barbara A. Block (New York: Academic Press, 2001)

¹² *Pacific Fisherman*, April, 1930, 38.

fuel three boats at once and two new ice crushers could deliver 2,100 pounds of chipped ice a minute.¹³ Tuna skippers like Manuel Freitas were exploring new grounds beyond the equator and as far south as the Galapagos Islands, owned by Ecuador. The *Mayflower*, under Joaquin M. Medina, delivered the first American tuna into Honolulu in 1932.¹⁴ A trip to the Philippines came in 1933, as the California Packing Corporation set up a subsidiary called the Philippine Packing Corporation.¹⁵ Within five years of Freitas's trip to Costa Rica, fishing had expanded some 3,500 miles from San Diego into the eastern tropical Pacific Ocean. Captain Guy Silva, owner of the *Emma R.S.*, was the first skipper to buy a small plane, which he used to scout for schools of tuna, flashing the news to the tuna clipper by radiophone.¹⁶ Crewmen salaries were touted in newspaper stories, and each returning boat seemed to set a new record, catching more fish faster, or on new and more exotic grounds.

The fishing industry in California began with sardines (*Sardina caerulea*). The first cannery opened in Monterey in 1896 and by World War I, sardines were the largest commercial fishery in the U.S.¹⁷ But sardines were subject to fluctuations; in 1903, the fish suddenly disappeared, leaving the Southern California Fish Company of San Pedro in east Los Angeles County searching for something else to can. One of the owners, Alfred P. Halfhill, decided to try

¹³ *Pacific Fisherman*, March, 1930, 22.

¹⁴ August J. Felando, "California's Tuna Clipper Fleet: 1918-1963" Part 1 of 3, *Mains'l Haul* 32, no. 4 (1996): 7-17.

¹⁵ August J. Felando, "California's Tuna Clipper Fleet: 1918-1963" Part 1 of 3, *Mains'l Haul* 32, no. 4 (1996): 17.

¹⁶ *Pacific Fisherman*, March, 1931, 21.

¹⁷ Tom Mangelsdorf, *A History of Steinbeck's Cannery Row* (Santa Cruz: Western Tanager Press, 1986), 26.

albacore tuna. He first had to create a market for the fish, but Halfhill was successful enough that by 1911 a tuna cannery was built in San Diego. It was a boom year for tuna; by 1917, there were 26 canneries strung along the Southern Californian coast, canning the catch of 400 boats and 1,200 fishermen.

Japanese fishermen made up half the work force, but they caught 86 percent of the fish.¹⁸ As the Japanese increased their immigration, first to Hawaii, then to California, they brought their fishing technology with them. Four Japanese men operated a whaling station at Point Lobos in 1898.¹⁹ The Japanese financed fishing operations in Baja California during the first decade of the 1900s. After the Mexican revolution of 1910, Kondo Masaharu of the Imperial Fisheries Institute of Tokyo arrived at Magdalena Bay to organize an abalone fishery. The Japanese brought with them long, slender bamboo poles that they had used to fish for tuna in Japan.²⁰

It was not until 1920 that American fisherman found that the most productive way to fish for tuna was with a “jap pole.”²¹ Until then, fishermen had used purse seines nets in the open ocean, but the wet cotton nets were extremely heavy, awkward, and dangerous in rough seas. But pole fishermen, standing in metal racks attached to the sides of their boats, could fish in much

¹⁸ Thomas Wolff, *In Pursuit of Tuna: The Expansion of a Fishing Industry and its International Ramifications—the End of an Era* (Tempe: Center for Latin American Studies, Arizona State University, 1980), 2.

¹⁹ Sandy Lydon “Japanese Whaling at Point Lobos, California” *Mains’l Haul* 37, no. 1 (2001): 20-29.

²⁰ Don Estes, “Kondo Masaharu and the Best of All Fishermen” *Journal of San Diego History* 23, no. 3 (1977): 9.

²¹ August J. Felando, “California’s Tuna Clipper Fleet: 1918-1963” Part 1 of 3, *Mains’l Haul* 32, no. 4 (1996): 11.

rougher weather. The fishermen each had a bamboo pole with a short line and wire leader attached to a barbless hook. Tuna were attracted by a technique called chumming, or putting live bait into the water, inciting the tuna in a feeding frenzy where they would strike at the hooks. The first American fisherman to try the Japanese technique was Captain M.O. Medina and his crew aboard the *Peerless*. “He was pulling in fish so quickly that most of his crew were handling the fish on deck rather than fishing.”²² Two or three fishermen on a single pole could land the largest of tuna.

By 1925, California fishermen were landing 22 million pounds of albacore a year. But the following spring, albacore disappeared from local waters. Schools of yellowfin and skipjack tuna appeared instead. The meat could be canned like albacore, but the color was darker. Canneries mounted an advertising campaign to educate the public about this new ‘light meat’ product, while fishermen headed south off Mexico, searching for albacore.²³

Among the boats searching in 1926 was the new 102-foot *Atlantic*, the model for what would come to be called the tuna clipper. Critics said it would never be able to catch enough fish to be profitable, but the *Atlantic*, also owned by M.O. Medina, was the start of a rapid escalation in tuna fishing. The vessel cost \$55,000 and could carry 110 tons of iced-frozen tuna in cork-insulated holds. Its success set off a building spree; between 1926 and 1945, 140 tuna

²² Ibid, 11.

²³ Thomas Wolff, *In Pursuit of Tuna: The Expansion of a Fishing Industry and its International Ramifications—the End of an Era* (Tempe: Center for Latin American Studies, Arizona State University, 1980), 3.

clippers entered the U.S. tuna fishery.²⁴ When fishing was poor off Southern California, fishermen moved steadily south. Technological developments during the 1930s included twin diesel engines and new brine refrigeration equipment that for the first time made it possible to catch and transfer fish longer distances.²⁵

Despite the Depression, boats continued to enter the fleet. They were getting larger, capable of traveling longer distances and catching more fish. Support operations were also being developed. A facility to freeze tuna in Costa Rica opened in 1936, also supplying ice to the American boats.²⁶ But while the boats were returning with good catches, the costs of tuna fishing were escalating with every mile they had to travel. Fred W. Schellin, president of the American Fishermen's Protective Association, estimated in 1930 that it took two tons of fish a day just to cover a boat's overhead. A boat could make nine deliveries a year, earning about \$82,500. Expenses totaled \$17,500, leaving \$65,500 that had to be divided into 20 shares. A captain and the owner retained eight shares; the rest of the shares were divided among the crew of twelve. A crewman might make \$3,275 a year, but it was often less. "There is money in tuna fishing," the article ended, adding, "but in the garnering of this ocean wealth there is nothing that even remotely resembles the old 'gold boom' days."²⁷

²⁴ August J. Felando, "California's Tuna Clipper Fleet: 1918-1963" Part 1 of 3, *Mains'l Haul* 32, no. 4 (1996): 7.

²⁵ August J. Felando, "California's Tuna Clipper Fleet: 1918-1963" Part 1 of 3, *Mains'l Haul* 32, no. 4 (1996): 18.

²⁶ *Pacific Fisherman*, August, 1936, 50.

²⁷ *Pacific Fisherman*, May, 1930, 26.

The Cocos Island catches in 1930 were especially welcome news because the Mexican government was restless over the American boats fishing off their coast. By 1923, nearly half of the tuna landed at San Diego and San Pedro came from Mexican waters. The two countries had signed a treaty in April of 1926, regulating aliens, narcotics, liquor, arms, marine products, and conservation of fisheries. The Americans terminated the treaty the following year. The Mexican government wanted to use landings from California Fish and Game to calculate taxes on fish caught off Mexico, but the Fish and Game Commission refused to share their data. The compromise solution was for the southern California boats to pay a uniform tax of \$15 per ton for all the bait taken off Mexico.²⁸

Pole fishing for tuna was complicated, because the boats had to find and catch live bait, such as anchovies or sardines, then go look for tuna. By 1932, the yellowfin fleet of almost 100 boats used three million bait fish each year, and the usual sites were showing signs of strain. There were no longer enough sardines at Point Loma, off San Diego, for the boats, and a cannery had been forced to close the year before. Large sardines had been depleted at Turtle Bay and three-inch anchovies were too small. The most reliable site had been Magdalena Bay, off Mexico, but the sardines had been depleted.²⁹ The boats could catch anchovies, but it was difficult to keep the anchovies alive as boats ranged south into warmer water.

²⁸ Letter from N.B. Scofield to H.J. Anderson, Oct. 19, 1936, Papers of Wilbert M. Chapman, University of Washington Special Collections, Box 12, Folder 21.

²⁹ *Pacific Fisherman*, March, 1932, 23.

The bait boat fleet was headquartered in San Diego and had been developed by the closely-knit community of Portuguese fishermen. But in nearby San Pedro, the fishery was dominated by descendents of Yugoslavians, who had brought the beach seines of the Adriatic Sea to the new world. These fishermen used open skiffs to set nets in large circles. The nets could be drawn up at both ends, creating a purse and preventing the fish from escaping at the bottom. With the development of gasoline engines, fishermen connected a winch to the main engine, making it easier to haul a heavy net. This technique, called purse seining, was used to catch salmon in Puget Sound and Alaska, as well as anchovies and tuna in Southern California.³⁰

The San Diego bait boats bitterly resented the entry of purse seiners into the tuna fishery off Mexico. They claimed that seiners killed large numbers of porpoises and that they frequently took more fish than they could accommodate in their holds, wasting fish.³¹ The Mexican government was also unhappy about the seine boats, which didn't need bait and could not be taxed. In 1933, the Mexican government prohibited seining in its waters. The ban was soon lifted, but there was a lingering sense of conflict. The Mexican licensing fees were steadily increasing and included an export tariff of \$20 a ton, a yearly head tax on fishermen of 55 cents each, monthly fishing licenses that were based on the size of the boat, as well as boat and anchor licenses. Americans were dependent on the Mexicans to fish, but the license costs and fees chafed.

³⁰ *Pacific Fisherman*. January, 1936, 18-19.

³¹ *Pacific Fisherman*, March, 1933, 14.

4.3 Tensions over the Japanese

While the presence of the Japanese within California's agricultural sector has received most of the scholarly attention, the Japanese also made up a substantial portion of the fishing industry. When the U.S. entered World War I, boats operated by the Japanese were interned. Since the Japanese harvested a large percentage of the state's fish catch, the boats were returned and the Japanese could fish as long as a "duly appointed American citizen was in charge of it."³²

By 1918, the Japanese had surpassed the Italians as the largest ethnic group within the industry, making up 28 percent of the fleet. A maritime requirement was that only an American citizen could own a federally documented fishing boat, yet the Japanese continued to own and operate their boats. A 1920 investigation by the State Board of Control of California asked if it was good public policy, "whether at peace or in war, to have so important a food as the fish supply monopolized by peoples of an alien race?" Fishermen had "an intimate knowledge of the coast line, valuable to an enemy," and the boats were a convenient means of illegal entry.³³ The link between fishing and the Japanese Navy was made constantly, in a variety of different publications.

But the canneries were also dependent on Japanese labor, paying them a lower wage. The International Packing Company opposed a 1921 bill that would have excluded the Japanese from the California fishing industry. While the

³² State Board of Control of California, *California and the Oriental* (Sacramento: California State Printing Office, 1922), 105.

³³ *Ibid*, 107.

fishermen railed against the competition, the companies were dependent on cheap Oriental labor. The anti-Japanese feeling in California culminated with a 1922 federal court decision, the Ozawa case, where the court ruled that Japanese were not eligible for citizenship because of race. Two years later, Congress passed the 1924 Immigration Act, which branded Japanese immigrants as undesirable members of a non-white race.³⁴

Anti-Japanese feeling was not confined to the United States. It was prevalent in British Columbia as well. While the federal government wanted to increase trade with Japan during the early part of the century, the B.C. legislature passed a series of restrictive acts excluding the Japanese from many occupations.³⁵ When the lieutenant-governor vetoed one of the restrictions in September of 1907, there was rioting in Vancouver. A mob estimated at 1,000 men attacked Hindus, Chinese, and Japanese residents.³⁶

By 1930, the Japanese were substantially expanding their fisheries in the Pacific, part of a industrial and shipping expansion. The government had subsidized steamship travel to North America since 1910. There was service to Seattle and San Francisco every four weeks and a ship to Tacoma every two weeks.³⁷ After 1919, Japanese cod imports threatened not only the Pacific cod

³⁴ Yukiko Koshiro, *Trans-Pacific Racisms and the U.S. Occupation of Japan* (New York: Columbia University Press, 1999).

³⁵ Frank Langdon, *The Politics of Canadian-Japanese Economic Relations, 1952-1983* (Vancouver: University of British Columbia Press, 1984), 11.

³⁶ Thomas A. Bailey, *Theodore Roosevelt and the Japanese-American Crisis* (Gloucester: Peter Smith Pub, 1964), 252.

³⁷ Eliot Grinnell Mears, *Maritime Trade of Western United States* (Stanford: Stanford University Press, 1935), 387.

fishery, but the Atlantic industry as well.³⁸ A new round of subsidies, starting in 1923, encouraged the construction of refrigerators, refrigerated boats, and ice-making facilities.³⁹ The policies were paying off in terms of new markets for Japanese exports, and fish continued to penetrate the American market. Shipments of tuna from Japan to New York in the 1930s made the trip in subsidized Japanese freighters that charged only 22 cents a case, just a nickel more than it cost to deliver California tuna to New York.⁴⁰

Tuna fishermen also faced more direct competition in 1936, when a Japanese trawler, the *Minato Maru*, reached Mexican waters in February of 1936 to trawl for prawns. The Kyodo Fishery Company, a subsidiary of the Japanese Industry Co., a subsidiary of Mitsubishi, operated the boat. By July, *Pacific Fisherman* was reporting that 134 tons of shrimp and sea bass from Mexico was delivered in San Pedro and loaded onto a freighter for shipment to Japan.

There were other threats to American fishing interests. A British company considered sending the *SS Thorland*, a Norwegian-registered refrigeration vessel, to the West Coast of Canada and U.S. to enter the halibut fishery. In a 1935 letter, Thompson sounded an alarm. Both Japan and Britain had overfished their stocks; now the “cornerstone of their fisheries policy is expansion of fleet and area, particularly of their pelagic and high seas fisheries.”⁴¹ The

³⁸ *Pacific Fisherman*, December, 1919, 23.

³⁹ Georg Borgstrom, *Japan's World Success in Fishing* (London: Fishing News (Books) Ltd., 1964), 63.

⁴⁰ R.S. Mathieson, "The Japanese Salmon Fisheries: A Geographical Appraisal," *Economic Geography* 34, no. 4 (1958).

⁴¹ W.F. Thompson to Dr. Carl Albert, Aug. 22, 1935, Box 278, Folder A-Z 1935, International Pacific Halibut Commission archives.

question of motherships expanding their fishery to U.S. waters was serious enough that R.H. Fielder, Chief of the U.S. Bureau of Fisheries, wrote a paper for the 66th annual meeting of the American Fisheries Society, tracing the development of factory ships, warning that their impact on marine stocks was unknown but that unregulated activity could deplete the high-seas fisheries.⁴² Both the Canadian and American governments protested the proposed trip by the *Thorland* to West Coast waters. The vessel owners promised to be “absolutely bound” to follow the regulations set by the halibut commission regulations. After protests by Canada, the owners ultimately decided the venture would not be profitable.⁴³

The threat of the *Thorland* added to concerns among West Coast fishing interests that American fisheries would have to be protected from the fishermen of other countries. Edward Allen warned the State Department in 1937 that both Japanese and British fisheries were dependent on expanding into new waters to keep catches high. Both countries had exhausted their own waters and now wanted to new territory. “In fisheries all over the world the home banks have

⁴² R.H. Fielder, “The Factory Ship—Its Significance to our World Trade and Commerce,” *Transactions of the American Fisheries Society* 66th annual meeting, Sept. 2-4, 1936, Grand Rapids, Mich., v. 66, 427-441, 441.

⁴³ Henry Maurice to Harold Thompson, Feb. 17, 1937, Box 287, Correspondence A-Z 1937, International Pacific Halibut Commission archives.

proved entirely inadequate to supply the demand and have been injured by overfishing,” Allen wrote.⁴⁴ The real showdown with foreign fishermen would come in the waters of the world’s richest fishery, Bristol Bay.

4.4 The “Scientific Investigation” of Bristol Bay

The announcement in 1936 that the Japanese intended to mount a “scientific investigation” into the salmon fishery in Bristol Bay brought an instantaneous reaction: Bristol Bay was being invaded by Japanese fishermen and the invasion had to be stopped. There was an enormous outcry, massive amounts of media attention as labor and fishing groups condemned the Japanese proposal. Politicians introduced bills to expand Alaska’s territorial limits and ban the Japanese from international waters.⁴⁵ The fluctuating salmon catch, which scientists had identified and industry had ignored, was suddenly recognized as a warning sign that further fishing, especially in the ocean, would spell the doom for the Bristol Bay runs.

Yet the 1936 catch was the largest in the history of the industry; a record pack of 8.4 million cases had been produced, nearly a million more than the

⁴⁴ Edward Allen to Dr. Francis B. Sayre, April 20, 1937, Box 278, Folder, “Allen, Edward W., 1937,” International Pacific Halibut Commission archives.

⁴⁵ L. Larry Leonard, *International Regulation of Fisheries* (Washington: Columbia University Press, 1944), 124.

previous record pack of 1934.⁴⁶ There were 117 canneries operating in Alaska in 1937, total capital investment was estimated at \$98 million, and industry profits were estimated at \$3 million annually.⁴⁷

On Feb. 23, 1937, representatives of Japanese and American fishing companies gathered at Seattle, where the Japanese suggested the formation of a joint company of floating salmon canneries to operate in Bristol Bay. The proposal called for lowering costs by using Japanese labor and intercepting the salmon offshore before they reached fresh water, bringing large profits to investors. It was the business model the Japanese had used successfully off Kamchatka, much to the unhappiness of the Russians. The Americans rejected the plan, but the proposal added to concerns about the seriousness of the Japanese in wanting to fish in Bristol Bay.⁴⁸ In a speech on the Senate floor on March 8, 1937, Washington Senator Lewis Schwellenbach declared the Japanese had depleted the fisheries off Kamchatka and would do the same off Alaska; then the boats “will proceed south by the coast of British Columbia and the States of Washington, Oregon, and California.”⁴⁹ The well-known success of Japanese fishermen was interpreted as a threat to the entire West Coast salmon industry.

⁴⁶ Ward T. Bower, “Alaska Fisheries and Fur Seal Industries in 1936,” Administrative Report No. 28, U.S. Bureau of Commerce, Bureau of Fisheries, 1937.

⁴⁷ L. Larry Leonard, *International Regulation of Fisheries* (Washington: Columbia University Press, 1944), 124.

⁴⁸ L. Larry Leonard, *International Regulation of Fisheries* (Washington: Columbia University, 1944), 129.

⁴⁹ Harry N. Scheiber, “Origins of the Abstention Doctrine in Ocean Law: Japanese-U.S. Relations and the Pacific Fisheries, 1937-1958,” *Ecology Law Quarterly* 16 (1989): 32.

In June of 1937, a fleet of Japanese vessels appeared in Bristol Bay to fish for crab. American fishermen claimed the fleet was larger than usual, although the vessels were operating outside of American territorial waters, as they had in past years, and loudly complained to the State Department, demanding action to protect American salmon.

The State Department pointed out that the salmon runs had not yet started, so it must be assumed the Japanese were fishing for king crab, not salmon, and that crab fishing was perfectly legal. The Department telegraphed the Embassy at Tokyo and was informed that the Japanese government had not issued any licenses for salmon fishing in Bristol Bay. Nevertheless, the U.S. Fish and Wildlife Service would send a representative to Bristol Bay to study the situation.

While Seattle fishing interests were suspicious of the Japanese intentions, the Bureau of Fisheries initially was not. The Bureau's Alaska representative, L.G. Wingard, observed from Juneau that the Japanese probably couldn't operate floating canneries off Bristol Bay because there was no supply of fresh water, and that the whole controversy was making a mountain out of a molehill. "No doubt this was a scheme to frighten the Bureau into relaxing the fishing regulations in that district so the large corporations could start packing earlier in the season than the Department regulations now permit," wrote U.S.

Fish Commissioner Frank T. Bell to Washington Rep. Homer T. Bone in June 18, 1937. "I am getting so used to these bugaboos that I refuse to get excited until creditable information is received." ⁵⁰

Bone responded by making an appointment to meet with Secretary of State Cordell Hull; Alaska Delegate Anthony Diamond and Washington Rep. Warren G. Magnuson attended the meeting. The "credible information" would come, secured on July 8, 1937, by "a party of practical salmon men," as *Pacific Fisherman* put it. "They used the obvious, direct method of ascertaining the facts, flying over the Japanese vessels—a method the Bureau of Fisheries has not seen fit to employ in exercise of its duty to protect the fisheries of Alaska." The flight found four Japanese fishing boats off Ugashik. The plane dropped to 100 feet and the observers clearly saw salmon on deck. "Fishing extremely poor; in opinion of fishermen cause of same being Japanese invasion of our fishing grounds at Bristol Bay," reported Harry Stuhr of the Alaska Fishermen's Union. Also present on the flight, in addition to cannery and fishing union representatives, was a man identified as Arthur C. Farlow of the J. Walter Thompson advertising agency of New York.

It was no doubt due to Farlow that a picture of the Japanese mothership, helpfully labeled, would show up on the front page of *The Washington Tribune*. The story received a great deal of attention. *The New York Times* had covered the Japanese fishing issue for the previous three years, reporting on conflicts off the Mexican, Australian, Panamanian, and East Indian waters. There were also a

⁵⁰ *Pacific Fisherman*, July, 1937, 23.

number of radio broadcasts over the Columbia Broadcasting System through 1938.⁵¹ Writer Richard L. Neuberger, who was a correspondent for *The New York Times*, railed against the Japanese in *The Promised Land*, published in 1938, blaming them for the decline in the salmon pack:

And the salmon runs in Alaska have fallen off from 20 to 80 percent in the past year because of an invasion of fishing fleets from Japan. The situation is so ominous that Senator Schwollenbach of Washington claims it menaces the peace of the United States...Just as the Nipponese military juggernaut rolls across China without regard for the amenities of civilization, so do these fishing vessels from Tokyo completely overlook conservation rules and principles in their quest for the finny wealth of the ocean.⁵²

The Bureau of Fisheries sent Leo T. Sturgeon to investigate the situation in Bristol Bay. He traveled through Seattle, where the fishing industry demanded a meeting, and gave him some practical advice (to transfer to a Coast Guard vessel when he entered the Bering Sea). The State Department issued a statement on Nov. 22, 1937, based on Sturgeon's inspection, and stating that the American government believed the reports of Japanese activity in Bristol Bay to be "reliable and authentic," and was not impressed that the Japanese government had not issued licenses to the ships. The State Department press release was clear, that an industry built up by the nationals of one country could not be destroyed by the nationals of another country:

The American government believes that the right or obligation to protect the Alaska salmon fisheries is not only overwhelmingly

⁵¹ L. Larry Leonard, *International Regulation of Fisheries* (Washington: Columbia University, 1944), 133.

⁵² Richard L. Neuberger, *Our Promised Land* (New York: The Macmillan Company, 1938), 134-135.

sustained by conditions of their development and perpetuation, but that it is a matter which must be regarded as important to the comity of the nations concerned.⁵³

In reply, the Japanese government assured the United States that, “without prejudice to the question of rights under international law,” the salmon fishing survey of the past two years would be discontinued for 1938, and that additional fishing licenses would not be issued.

While the Japanese thought it would be possible to negotiate with the Americans over salmon, Americans were absolutely opposed to negotiating anything because the Japanese were not entitled to any fish. What was needed “was a firm declaration that the fish are American property,” *Pacific Fisherman* editorialized in September of 1937. The Seattle fishing industry came together to form the joint Committee for the Protection of the Pacific Fisheries, with publisher Miller Freeman as chairman.⁵⁴

The Committee complained loudly and often to the U.S. State Department, but was unable to prod it to take stronger action. They warned that Japanese fishing would lead to the “complete and permanent destruction” of Alaska salmon, adding that the U.S. Navy had recently become aware that “perhaps 90 percent” of the personnel on the Japanese ships were naval reservists.⁵⁵

Writing in 1939, American historian Henry W. Clark noted:

The whole dispute was aired in the newspapers, magazines, movies, and on the radio throughout the winter of 1938 so that as

⁵³ L. Larry Leonard, *International Regulation of Fisheries* (Washington: Columbia University Press, 1944), 131.

⁵⁴ *Pacific Fisherman*, September, 1937, 27.

⁵⁵ *Ibid*, 27.

one writer put it: "The popular concept of salmon is changing from that of a can on the grocer's shelf to a source of international contention." ...Eventually some settlement must be arrived at because research has proved that there is an absolute maximum catch possible and anything in excess will diminish the supply. Alaska has been taking this maximum, therefore Japan must be stopped or the American industry curtailed.⁵⁶

The dispute with Japan marked the rise of salmon as an icon in the Northwest, a status that would only be reinforced as the numbers of salmon dwindled.

4.5 The American Argument

The U.S. response to the Japanese was crafted by Secretary of State Cordell Hull. He argued the U.S. had invested large sums of money in hatcheries, and that American operators had foregone income over many years by accepting a regulatory plan that limited fishing to small sailing boats. He also asserted that the regulatory regime involved an investment in scientific research and enforcement, giving the U.S. "a special claim in the ocean areas beyond three miles where the fishery was centered."⁵⁷ Hull also referred to the special biology of salmon, and the ability of the fish to return to the land to spawn. "Hull did not claim U.S. sovereign "ownership" of such fish, as some politicians and academic commentators were then demanding. He did argue, however, that the salmon deserved special protection in the course of migrations out to sea and

⁵⁶ Henry W. Clark, *Alaska, The Last Frontier* 2nd edition (New York: Grosset and Dunlap, 1939), 225.

⁵⁷ Harry N. Scheiber, *Inter-Allied Conflicts and Ocean Law. 1945-53: The Occupation Command's Revival of Japanese Whaling and Marine Fisheries* (Taipei, Taiwan: Institute of European and American Studies, Academia Sinica, 2001), 15.

return. Such protection, he contended, was necessary in order to avoid depletion harmful to American fishing operators who were in effect legally required to stay close to the coast."⁵⁸

On March 25, 1938, Hull wrote to Miller Freeman, saying the Japanese government was withdrawing the proposal. He added that if the boats fishing for crab had accidentally taken salmon, it was without the knowledge of the Japanese government, a distinction that was lost on Freeman and the Seattle processors.⁵⁹ The issue of Japanese fishing in Bristol Bay subsided, but it was certainly not forgotten. The Northwest salmon interests continued to press President Roosevelt for take whatever steps were necessary to protect American salmon.

Legislation was introduced in both the Senate and House of Representatives to extend the jurisdiction of the U.S. to protect salmon. In the spring, when the Japanese vessels appeared as usual in the Bering Sea, there were exaggerated reports such as the widely publicized telegram from Captain. John E. Shields of the *Sophie Christenson*, in June of 1938:

BERING SEA COVERED BY JAPANESE FISHING BOATS AND
NETS NORTH OF BLACK HILLS. NO CUTTERS AROUND. WE
HAVE GOD-GIVEN INSTINCT TO SHOOT STRAIGHT. PLEASE
SHIP A DOZEN HIGHPOWERED RIFLES PLENTY AMUNITION.
DUPLICATE FOR CHARLES R WILSON.⁶⁰

⁵⁸ Harry N. Scheiber, *Inter-Allied Conflicts and Ocean Law. 1945-53: The Occupation Command's Revival of Japanese Whaling and Marine Fisheries* (Taipei, Taiwan: Institute of European and American Studies, Academia Sinica, 2001), 16.

⁵⁹ Papers of Miller Freeman, Box 5, Folder 29. Telegram, Hull to Freeman, March 25, 1938, University of Washington Special Collections.

⁶⁰ Papers of Miller Freeman, University of Washington Special Collections, Box 5, Folder 29.

An investigation proved that Japanese boats were not in Bristol Bay during 1938, but the agitation continued until it was engulfed in other tensions that led to December 7, and the Japanese bombing of Pearl Harbor.

4.6 The Americans and Conserving Salmon

The strongest point that Americans made in denouncing the proposed Japanese fishery on Bristol Bay salmon was that the runs were being managed for conservation, and that American fishermen were restraining their harvest so the runs could be perpetuated. As proof, there was the 1924 White Act, which declared that at least fifty percent of the fish would be allowed to spawn. This forbearance on the part of American fishermen was pointed out in many articles written about the conflict, especially those by Kathleen Barnes, a researcher with the *Far Eastern Survey*, a fortnightly publication of the American Council and the Institute of Pacific Relations, based in New York City. In a 1936 article, Barnes wrote that salmon conservation has “been raised to a fine art, and it is hardly to be wondered that the fish so conserved by the United States should be felt by some to be a possession of this country.”⁶¹ The costs of West Coast salmon conservation was estimated at \$16 million between 1927 and 1936, with \$5 million having been spent in Alaska. But while the figures were quoted, exactly

⁶¹ Kathleen Barnes, “The Clash of Fishing Interests in the Pacific” *Far Eastern Survey* 5, no. 23 (1936): 245.

what the conservation costs included was not spelled out.⁶² A budget of \$5 million over nine years was not much to spend for either research or enforcement, let alone both.

The conservation argument was repeated in a book Barnes co-authored with Homer E. Gregory, a professor of management and accounting at the College of Economics and Business at the University of Washington. “At present the United States and Canada operate the fisheries in question under strict conservation regulations,” they wrote. “Were nations of other countries to exploit the fisheries, the effectiveness of the existing regulations would be jeopardized.”⁶³

The idea that Bristol Bay fisheries were strictly regulated was widely held, showing up in the pages of *Pacific Fisherman* and in scholarly publications. L. Larry Leonard’s dissertation in political science at Columbia University in 1944, an excellent account of the international regulation of fisheries, declared, “The fisheries have reached optimum production and are now in perfect balance as a result of the conservation program of the government.”⁶⁴ Some forty years later, legal scholar Harry Scheiber, who has written widely about the role of Pacific

⁶² L. Larry Leonard, *International Regulation of Fisheries* (Washington: Columbia University Press, 1944), 124.

⁶³ Homer E. Gregory and Kathleen Barnes, *North Pacific Fisheries* (San Francisco and New York: American Council, Institute of Pacific Relations, 1939), 3.

⁶⁴ L. Larry Leonard, *International Regulation of Fisheries* (Washington: Columbia University Press, 1944), 136.

fisheries in the development of international law, adopted the Barnes and Gregory position: that Americans were foregoing harvest to preserve the salmon.

He repeated this claim as recently as 2001:

The salmon fishery had long been under a conservation-oriented regulatory regime, both unilateral and in cooperation between Canada and the United States. And this regulatory program in turn was complementary to capital-intensive U.S. and Canadian programs of salmon fish hatcheries. Hence the appearance of the large-scale Japanese factory ships (in contrast to the small sail-powered vessels that were mandated for U.S. fishermen by the American regulations) were seen by the American and Canadian salmon industry as the first step in destruction of the salmon stocks and hence ultimately in the destruction of their livelihoods.⁶⁵

But was the claim true? Were Americans actually conserving salmon stocks?

Historical evidence suggests otherwise.

There was a solid record of concern, expressed by biologists, about the amount of fishing that was taking place in Alaska, and the pressure it was putting on salmon stocks. Charles Gilbert and Henry O'Malley had identified concern about the decline in Bristol Bay runs in 1919, raising the question if the fluctuations in the catch meant that the runs were being overfished.⁶⁶ Willis Rich and Edward Ball, writing in 1928, wondered if the Bristol Bay runs had reached their maximum productivity.⁶⁷ Moreover, there was ample evidence that the so-called "conservation" measures were neither adequate nor enforced. The

⁶⁵ Harry N. Scheiber, *Inter-Allied Conflicts and Ocean Law. 1945-53: The Occupation Command's Revival of Japanese Whaling and Marine Fisheries* (Taipei, Taiwan: Institute of European and American Studies, Academia Sinica, 2001), 14.

⁶⁶ Charles H. Gilbert and Henry O'Malley, "Special Investigation of Salmon Fishery in Central and Western Alaska," *U.S. Bureau of Fisheries Document 891*. Alaska Fisheries and Fur Industries, 1919, 143.

⁶⁷ Willis H. Rich and Edward M. Ball. "Statistical Review of the Alaska Salmon Fisheries. Part 1, Bristol Bay and the Alaska Peninsula." *Bulletin of the U.S. Bureau of Fisheries*, 44 (1928): 41-95.

Americans had indeed implemented restrictions to regulate the catch, but the restrictions were limited and there was little enforcement, especially of the fish traps owned by the canning companies. In addition, Alaska had closed the last of its hatcheries in 1936, after studies in British Columbia found that the hatcheries did little to increase sockeye stocks.⁶⁸

Others also questioned the effectiveness of Bristol Bay conservation. In 1933, the Department of the Interior hired Michigan ichthyologist Carl Hubbs to investigate possible malfeasance in the U.S. Fish and Wildlife administration under Frank T. Bell, the U.S. Fish Commissioner between 1933 and 1939.⁶⁹ After an extensive series of interviews throughout Alaska, Hubbs concluded the technical staff was inadequate and more money needed to be spent on investigating Alaska salmon. Hubbs declared:

There is little gained, however, for the frequent statements that the administration of the Alaska fisheries is on a safe and sufficient status. Only blind self-satisfaction, ignorance or selfish self-interest can lie behind the naïve optimism of such claims.⁷⁰

In his preliminary report, issued Nov. 30, 1939, Hubbs said the Bureau's top three officials, Frank T. Bell, Leonard G. Wingard, and A.W. Hawkins, had committed criminal actions, awarding special favors and fishing privileges involving fish traps. He recommended the FBI should continue the investigation.

⁶⁸ Joseph E. Taylor III. *Making Salmon: An Environmental History of the Northwest Fisheries Crisis*. (Seattle: University of Washington, 1999), 219.

⁶⁹ Hubbs was at the University of Michigan from 1920-1944, when he moved to the Scripps Institution of Oceanography.

⁷⁰ NARA RG 48, Dept. of the Interior, Central Classified Files, Box 3369, Report by Carl Hubbs on Malfeasance and Corruption in the Bureau of Fisheries, File Number 13.

In July of 1939, a subcommittee from the Merchant Marine and Fisheries Committee held hearings throughout Alaska. They found that four employees based in Seattle represented the entire scientific field force for the Alaska coastline. There was a complete lack of knowledge about the life and habits of salmon at sea, and an extensive offshore study was needed to provide needed information.⁷¹ So even if staffing had been sufficient to enforce conservation, it was not clear that they had a scientific basis for knowing what to do.

The position crafted by Cordell Hull, that the Americans sacrificed to conserve salmon, was an essentially political formulation, designed to present the Americans in the best possible light. The official American position with regard to Japanese fishing in Bristol Bay was that the American fishery was grounded in conservation, of not taking more fish than the resource could bear, and that Americans had foregone harvest in order to ensure the perpetuation of the runs. But the evidence in the streams suggests otherwise. There is no doubt that Americans should have been concerned about the prospect of additional fishing in the waters off Alaska, since it was known that the Japanese high-seas fishery during the 1930s had taken salmon bound for the Russian coastal streams, causing hardship to the inshore communities. Additional harvest, especially at sea, had the potential to greatly impact the number of salmon returning to the streams to spawn, and some runs were already being overharvested.

⁷¹ Richard A. Cooley, *Politics and Conservation: The Decline of the Alaska Salmon* (New York: The Conservation Foundation, 1963), 149.

The Americans saw their fishery as being heavily regulated, a view that was simply not consistent with the reality in the streams. The Bureau of Fisheries set seasons and how many days could be fished a week, although the regulations were set in Washington, D.C., in advance of the season, and designed for efficient operation of the canneries. The prime conservation mechanism was mandating the use of small, sail-driven boats, an inefficiency that increased costs to the fishermen, not the processors they delivered to. It was not fishing flat out, but it was very close to it, given the efficiency of the fish traps and the laxness of the enforcement. The White Act of 1924 was frequently cited as evidence of how serious the Americans were about conserving salmon, although there was no scientific evidence that allowing 50 percent of the fish to spawn would be effective, even if there had been systematic enforcement. It would be another decade, in the wake of the collapse of the Bristol Bay runs, before W.F. Thompson would start to identify the outlines of science-based conservation program for Alaskan salmon.

Hull's formulation reinforced two perceptions: that the U.S. was among world leaders in the conservation of resources, and that the Japanese were not, and both perceptions were false. The conception of Japan as not being interested in conservation had a long history, stretching back to the more than two decades of conflict before the fur seal treaty was signed in 1911. There was also a lot of coverage of Japan's 1926 decision to increase the harvest on fur seals. The Japanese argued the seals were entering Japanese seas and eating

fishing stocks, seriously damaging the Japanese fishing industry.⁷² The conflict between Japan and Russia over fishing leases in Kamchatka was heavily covered by the American press. Once Japan began high seas whaling in 1934, it had refused to comply with the most rudimentary voluntary regulations, of not harvesting Right whales, nursing females, and calves.⁷³ All these events contributed to the American perception that the Japanese were concerned only with catching as many fish as they could, regardless of potential negative impacts on the stocks—especially the stocks of other nations, such as Russia, and now, the U.S.

But in fact, Japan exercised a much greater control over its inshore fishing fleet than did the Americans. Because so many villages were dependent on their local grounds for food, fishing had been strictly regulated since feudal times to maximize food. Closures were frequent and boats were licensed. Boats could not move into new fishing waters, because they could not get licenses. The large mothership operations were also regulated by the national government, which established how many fleets there would be and where they would operate. Operations were often curtailed for economic reasons, rather than for conservation. When the high-seas salmon fleet faced declining revenues in 1935, the government had curtailed the number of licenses.

But as Japanese fishing capacity exceeded the capacity of inshore waters, the government's imperialistic solution was to move the fisheries offshore, to

⁷² *History of Scientific Study and Management of the Alaskan Fur Seal, Callorhinus ursinus, 1786-1964*. NOAA Technical Report NMFS SSRF-780, March 1984: 25.

⁷³ George L. Small, *The Blue Whale* (New York: Columbia University Press, 1971), 152.

protect the inshore stocks and the villages that depended on them. There were no regulations on how much fish could be taken in offshore waters. The Japanese were respected and feared for the ability of their fishermen. But Japanese fisheries science, which had played a significant role in the success of the fleet, was not accorded respect, because the Americans dismissed it as only being used to catch more fish, not to conserve them. It was an argument based more on nativism, politics, and self-interest, than on an analysis of the science involved.

4.7 Industrial Fishing

There were many similarities between the expansion of the American fishery in Alaska and the Japanese expansion into the eastern North Pacific. Both industries were dominated by large corporations, and their profits depended on paying low wages to fishermen and processing crews. Both industries lobbied their governments to expand fishing opportunities. The chief difference was that the Japanese industry had expanded as part of government policy, with subsidies that encouraged the construction of boats, processing and refrigeration facilities, and shipping. The Japanese government regulated its high seas fisheries when fishing was no longer economic, removing licenses from the fleet. But the government was still subject to pressure from its unemployed fishermen, especially those in the northern villages, where poor farmers depended on the wages they made on the factory ships.

The American government was not involved in fishing operations. It supplied services to the fishing fleets, but the contribution was less direct. The U.S. Bureau of Fisheries did research on innovations in fishing gear, as well as an extensive research program on the best ways to preserve catches and to turn fish waste into a meal or flour that could be used in commercial fertilizer and livestock feed. The agency also worked to improve marketing of seafood, essentially turning itself into a trade organization for the industry.⁷⁴ While it is difficult to make direct comparisons, it is likely that the Japanese research effort, which was more focused, greatly exceeded the efforts by the Americans.

For the industries in both countries, the North Pacific fisheries were extremely lucrative. The Japanese request for a scientific investigation into Bristol Bay salmon pulled the State Department into West Coast fisheries politics, an involvement that would deepen as fishery conflicts in the Pacific escalated after the war.

⁷⁴ Theodore Whaley Cart, "The Federal Fisheries Service, 1871-1940: Its Origins, Organization, and Accomplishments," *Marine Fisheries Review* 66, no. 4 (2006), 21-22.



Illustration 1: Japanese fishing boat in Bristol Bay, July 8, 1937. (Papers of Wilbert M. Chapman, University of Washington Special Collections).

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Chapter Five

The Question of Overfishing versus the Desire to Fish

We have in the sea a great natural wealth of food, which is there for the catching. How can we best exploit these riches, so as to get the maximum steady yield, without waste of effort? Are we in danger of so depleting the stocks that the yield must fall? What, in general, is the relation between yield and intensity of fishing? These are some of the practical questions which arise and to which fishery research attempts to find an answer.

E.S. Russell¹

During the 1930s, E. S. Russell, the Director of Fishery Investigations for the British Ministry of Agriculture and Fisheries, began to study of what he called “the special kind of mortality” that fish faced: the hunting by humans.² By 1939, Russell had synthesized the work of European scientists with the findings of William F. Thompson on West Coast halibut, and had come up with a modern formulation that he called the “overfishing problem”. Scientists had theorized for many years that there was an optimum fishing rate for each fish, but how could it be determined? Russell drew on the work of Russian scientist F.I. Baranov, who first observed that there was a relationship between the size of a fish population and the amount of fishing on it. He also used the work of Norwegian scientist Johan Hjort, who had discussed estimating the optimum catch in a 1933 essay. Two years later, Russell’s colleague, Michael Graham, analyzed the North Sea

¹E.S. Russell, *The Overfishing Problem*, (Cambridge: Cambridge University Press, 1942), 1.

² Ibid, 1.

cod fishery and concluded that a moderate reduction in the intensity of fishing would increase the yield per fisherman.³ When it came to fishing, less would be more.

Estimating the impact of fishing on fish stocks was not an intellectual exercise. Ever since the formation of the International Council for the Exploration of the Seas (ICES) in 1902, there had been concern about overfishing in the North Sea and the North Atlantic. In 1937, the British government convened a conference to address overfishing issues. A "Convention on the Regulation of Meshes of Fishing Nets and Size Limits of Fish" was adopted, intended to apply to the Atlantic north of the equator and to portions of the Arctic Ocean. The convention was designed to regulate mesh sizes, so that immature fish would be released unharmed. It was signed by ten Western European countries but with the start of World War II, it failed to go into effect.

In 1939, Russell traveled to John Hopkins University to deliver a series of lectures at the School of Hygiene. The five lectures were published in 1941 under the title *The Overfishing Problem*, and dedicated to the memory of Raymond Pearl, a well-known population biologist (and sometime eugenicist) who had died the year before. Working with a statistician, Lowell Reed, Pearl had tried to forecast the eventual size of the U.S. population. They based their prediction on previous U.S. census data and a new mathematical model, the logistic

³ Ibid, 76.

equation.⁴ Pearl and Reed described the growth of a population along a smooth S-shaped path toward a stable upper limit.⁵ Russell applied their model to fish stocks.

In the five lectures, Russell painstakingly laid out the evidence that hake, cod, haddock, and plaice were being “definitely overfished, in the sense that the intensity of fishing had gone beyond the optimum and has resulted in depressing stocks below their most profitable level.”⁶ Russell suggested that too many fish were caught before they had a chance to spawn, and many of these undersized fish were discarded because they were too small to have market value.⁷

In the preface to the published lectures, Russell pointed that World War I had provided biologists with a “Great Fishing Experiment,” because the curtailment of fishing had provided time for badly-stressed stocks to recover their productivity. Fishing had been so severely curtailed that when fishermen ventured back to the grounds, they found extremely good catches. When compared to fishing rates in 1914, the catch statistics showed that the weight of the plaice population in the sea had nearly doubled.⁸ It was a critical piece of evidence for Russell and Graham as they tried to decipher the impact of a rapidly growing fishing fleet on the stocks of plaice, cod, and haddock. But the results of the Great Fishing Experiment were ignored in the rush to return to fishing, and by 1920,

⁴ Tim Smith, *Scaling Fisheries: The Science of Measuring the Effects of Fishing, 1855-1955* (Cambridge: Cambridge University Press, 1994), 217.

⁵ Sharon E. Kingsland, *Modeling Nature: Episodes in the History of Population Ecology*, 2nd, edition, (Chicago: University of Chicago Press, 1995), 65.

⁶ E.S. Russell, *The Overfishing Problem* (Cambridge: Cambridge University Press, 1942), 98.

⁷ Ibid, 126.

⁸ Tim Smith, *Scaling Fisheries: The Science of Measuring the Effects of Fishing, 1855-1955* (Cambridge: Cambridge University Press, 1994), 158.

unrestricted fishing had wiped out the gains, squandering the opportunity to maintain the stocks at that highest level through control of effort. Unrestricted fishing wasted fish, but it also wasted the resources of fishermen, leaving them with higher expenses and less profit.

The start of the Second World War in 1939 marked the start of the Second Great Fishing Experiment, and Russell suggested that the longer the war lasted, the greater the opportunity for fish stocks once again to recover. The presence of the large Germany navy and air force sharply curtailed fishing, as it had during World War I. Working fishing boats were subject to heavy enemy fire. Many of the larger boats were conscripted for military service, directed into the Royal Naval Patrol Service, which eventually grew to 66,000 men and 6,000 vessels of all shapes and sizes. Service vessels played a critical role as minesweepers. Some were equipped with an early form of sonar and hunted for submarines. They were used as escorts for the hazardous Russian convoys. Fishing boats played a major role in the evacuations at Dunkirk and elsewhere on the French coast.⁹

Russell argued that a “modest reduction” in fishing power would benefit the fishing industry of all nations, making it possible to reap “a permanent advantage from the increase in fish stocks which is now taking place as a result of the war. The adjustment of fishing power in such a way as to obtain the maximum yield without waste of effort, thus avoiding overfishing, is an urgent

⁹ Robb Robinson, *Trawling: The Rise and Fall of the British Trawl Fishery* (Exeter: University of Exeter Press, 1996), 185.

task which must be undertaken, by international action, as soon as possible after the cessation of hostilities.”¹⁰ If managers refused to act, soon fishermen would no longer afford to go fishing.

5.1 Trying to Regulate Fishing

Michael Graham built on Russell’s work in *The Fish Gate*, published in 1943. The number of British fishermen had declined because they could not make a living. As soon as a fisherman began fishing a virgin stock, the profitability of the fishery began to decline. Fishermen responded by making their gear more efficient, but eventually there was a point where the fishery was no longer economic. From this, Graham deduced his Great Law of Fishing: “Fisheries that are unlimited become unprofitable.”¹¹

Graham ended his argument with a plea about the urgency of taking action before World War II ended, so that the gains accrued by fish populations would not be wasted, as they had been after the first war.

What we understand now about the fisheries differs from what we understood twenty years ago, mainly in this: we used to think that fishermen should moderate their efforts for the sake of posterity in order that there should be still a living in the sea for their sons; whereas we now see quite clearly that (whether it is necessary to think of their sons or not) it is essential, for the *sake of their own living*, that they should band together to exercise the virtue of moderation.¹² (*italics added*).

Regulations were needed, and the time to establish them was now.

¹⁰ E.S. Russell, *The Overfishing Problem* (Cambridge: Cambridge University Press, 1942),viii.

¹¹ Michael Graham, *The Fish Gate* (London: Faber and Faber Limited, 1943), 155.

¹² *Ibid*, 156.

The British held another overfishing conference in March of 1943. This time Russell put forth a controversial proposal for a new kind of regulation, restricting the tonnage of the fishing fleet of each country, taking tonnage as a rough measure of fishing capacity.¹³ There was enormous resistance. Canada wanted to include all North Atlantic high-seas fisheries in the Convention, to avoid creation of an area where European fleets would escape restrictions and deplete North American stocks. The Europeans were against that proposal, and so were the Americans, who adamantly refused to consider inclusion of their country's waters in a European convention.¹⁴ Agreement was blocked by a dispute over the size of the area to which the convention would apply.¹⁵

Politically, there was little interest in Russell and Graham's push to restrict the tonnage of the fishing fleets. The European North Sea and North Atlantic fisheries were among the oldest and most intensively fished in the world, and there was a significant quantity of information about how the stocks could be stressed, causing catches to fall. But the war had significantly reduced the ability of European fishermen to fish at all, and lack of protein was a significant health problem. With the prospect of good catches, there was little interest in a convention to restrict fishing effort.

Graham had spent his war years finding more efficient ways for heavy artillery gunners to determine correct ranges. The usual approach had been to

¹³ Helen M. Rozwadowski, *The Sea Knows No Boundaries: A Century of Marine Science under ICES* (Seattle: University of Washington Press, 2002), 108.

¹⁴ *Ibid.*, 108.

¹⁵ Ann Hollick, "The Roots of U.S. Fisheries Policy," *Ocean Development and International Law Journal* 5, no. 1 (1978): 63.

raise or lower the barrel, moving in on the target. Graham had a mathematician, H.R. Hulme, who was assigned to the British Air Ministry, work on the problem.¹⁶ He also asked Hulme to work on deriving an equation for the sustainable yield of an exploited population, as a function of the rate of mortality due to fishing and the amount of fishing effort. Hulme scrawled an equation on the back of an envelope.

“Although not sure of the details, Graham hoped that Hulme’s envelope held a tool that would allow the comparison of various management proposals,” wrote biologist Tim Smith. “He could see that Hulme was pointing in the right direction, but he realized that he would need mathematical help to develop and apply Hulme’s research.”¹⁷ Graham passed the envelope to two young researchers, Raymond Beverton and Sidney Holt. Beverton had graduated from Cambridge and arrived at Lowestoft in late 1945. Holt, who had graduated from Reading University, arrived in early 1946. Concerned about how quickly fishing was resuming, and the coming struggle over regulating North Sea fisheries, Graham encouraged them to draft a paper immediately reflecting Russell and Graham’s theory that greater benefits could be achieved if the fish were allowed to grow before they were caught. Graham was well aware of what happened after the Great Fishing Experiment of 1918: a surge in catches, a rush of new fishermen into the fishery, followed by the inexorable decline of North Sea

¹⁶ Tim Smith, *Scaling Fisheries: The Science of Measuring the Effects of Fishing, 1855-1955* (Cambridge: Cambridge University Press, 1994), 310.

¹⁷ *Ibid*, 311.

stocks, and profits for fishermen. It was a pattern he was determined not to see repeated. Scientists did not have the knowledge to act in the 1920s, but two decades later, Graham thought the pattern did not have to be repeated.

There was no time to lose. By 1947, Holt had shown that the survival rate of North Sea plaice during 1946 and 1947 was as low as during the years 1937 to 1939, with important implications for the British food supply.¹⁸ Beverton and Holt set out to construct algebraic models of fish populations, and to study how the fish reacted to different types of fishing gear and fishing intensity. Graham wanted a thorough treatment of the available information, proving to the industry and the government how great the benefits of conservative fishing could be.

5.2 Fishing and the War in the U.S.

Like many nations during the Second World War, the U.S. had no interest in curtailing its fisheries. Most European fisheries had been severely interrupted during the war, but American (and Canadian) fishing expanded greatly, especially on two of the most important fisheries: salmon and sardines. Secretary of the Interior Harold L. Ickes had urged maximum production for the war effort.¹⁹ Ickes' office authorized the construction of 877 new fishing boats during 1945, bringing the entire U.S. fleet back up to pre-war levels. When the war ended, the

¹⁸ Raymond J. Beverton and Sidney J Holt, *On the Dynamics of Exploited Fish Populations* (Caldwell, N.J.: The Blackburn Press, Reprint of First Edition, 1957, 1993) 21.

¹⁹ Harold L. Ickes, "The Nation Turns to its Fisheries" *Pacific Fisherman*, January, 1943, 27.

government provided incentives for veterans to go fishing, including money for boats and fishing equipment.²⁰ The intensification of fishing during the war soon showed up in the fish stocks.

The California sardine fishery, after landing a near-record catch of 614,045 tons in 1944-45, dropped to 130,121 tons by 1948.²¹ The 1945 Bristol Bay salmon catch was so poor that the canners offered to pay W. F. Thompson to come up with a research program to determine how many salmon needed to escape to perpetuate the runs. The 1946 salmon season was a disaster across Alaska, the worst in nineteen years. By 1953, President Dwight G. Eisenhower had to send federal food relief to the territory, and the federal mismanagement of the salmon runs became a potent argument for statehood.²²

Despite the mounting evidence of decline in the major runs, the U. S. post-war policy was a continuation of the policies of the 1930s; an expansion of distant water fisheries. The fishing goals were increasingly allied with military objectives, as policy makers sought to establish American territorial rights in the high seas. The Japanese fishing industry, which had dominated fishing in the Pacific during the 1930s, was now strictly curtailed, opening an opportunity for the U.S. to begin developing resources the Japanese had discovered. The United States wanted to secure the rich fish resources off Alaska's Bristol Bay for itself and it wanted continued access to the bait fish of Latin America as it

²⁰ "U.S. Builds New Fishing Fleet." *Pacific Fisherman*, March, 1944, 34.

²¹ John Radovich, "The Collapse of the California Sardine Fishery, What Have we Learned?" *California Cooperative Oceanic Fisheries Investigations Reports* 23, (1982): 56-77.

²² Richard A. Cooley, *Politics and Conservation: The Decline of the Alaska Salmon* (New York: The Conservation Foundation, 1963), 183.

expanded its tuna fisheries deeper into the Pacific. As early as 1943, the U.S. military had decided on a Pacific strategy that depended on the building of military bases, some of them in the Mandated Islands, the former Japanese territories which came under U.S. control in 1946.²³ The presence of American fishing boats would strengthen claims to the islands and their tuna resources.

To many in the fishing industry, including *Pacific Fisherman* publisher Miller Freeman, the Japanese attack on Pearl Harbor had been “tragic verification” of Japan’s intent to infiltrate and take over the American fishing industry.²⁴ Freeman peppered Secretary of State Cordell Hull with letters and advice during the war, passing on rumors about Japanese fishermen who doubled as spies, and continually pointing out that a solution would be needed to the Bristol Bay problem as soon as the war ended. Freeman and many others in the salmon industry wanted enclosure of Alaskan salmon, to protect them from the Japanese.

The American fishing industry had also been chagrined that the Japanese had caught and exported over \$27 million worth of Bristol Bay king crab to the U.S. between 1931 and 1940. Certainly the Americans were capable of catching the fish themselves, but the salmon fishery was firmly anchored on shore, in small sailing boats, and the floating motherships could not afford the time to dabble with crab gear. The exploration of new fishing resources was felt to be a

²³ Michael Schaller, *The American Occupation of Japan; the Origins of the Cold War in Asia* (New York, Oxford: Oxford University Press, 1985), 54.

²⁴ “Japanese Menace Long Seen in Fisheries of the Pacific,” *Pacific Fisherman*, January, 1942, 18.

government responsibility. Congress authorized money for a preliminary investigation into the Alaska crab resource in 1940 and again in 1941, using a floating cannery *Tondeleyo* and three fishing boats. A 1942 report by the U.S. Fish and Wildlife concluded there was an “outstanding opportunity for a large-scale king crab enterprise in Bering Sea, and probably only a large-scale operation could be successfully conducted there.”²⁵ In a 1944 joint resolution, Congress directed the U.S. Fish and Wildlife Service to survey the extent and condition of all marine and freshwater fishery resources, including the “high seas resources in which the U.S. may have interests or rights.”²⁶

Throughout the war years, the U.S. government worked to increase fishing to add to the food supply. The link between the military and the fishing industry was further strengthened in 1943 by the creation within the Interior Department of the Office of the Coordinator of Fisheries. Harold Ickes (1874-1952), who was Secretary of the Interior between 1933 and 1946, appointed himself to head the office and he appealed to the fishing industry to make a maximum effort to increase the protein supply.²⁷ In March of 1943, Ickes and his office assumed total control of the Alaskan salmon industry, allocating manpower and supplies to operate certain canneries. Conservation regulations were relaxed, but the regulations allegedly would act “at the same time to preserve the capital stock of

²⁵ U.S. Fish and Wildlife Service, “The Alaskan King Crab,” *Fishery Market News* May, 1942 supplement, (1942): 27.

²⁶ Harry N. Scheiber, “Pacific Ocean Resources, Science, and Law of the Sea: Wilbert M. Chapman and the Pacific Fisheries, 1945-70,” *Ecology Law Quarterly* 13, no. 38 (1986): 394.

²⁷ Harold L. Ickes, “The Nation Turns to its Fisheries” *Pacific Fisherman*, January, 1943, 41.

the resource.”²⁸ Despite the claim of conservation, there was little evidence of it. The federal government controlled the fishing industry for three years, deciding which canneries would operate, how much labor they would be allowed, and how much canned salmon would be produced. Fishermen were given draft deferments and government contracts boosted prices for the catch.²⁹ The federal government also eased regulations in the California sardine fishery. Catches increased sharply during the War, despite concerns by California Fish and Game scientists that too many sardines were being harvested.³⁰

The largest wartime fishery project came from the Department of Agriculture, which recommended the acquisition of a ship capable of catching and processing large amounts of fish at sea. The initial idea was a ship that could supply American military bases in the Pacific with canned crab, salted cod, and frozen fillets of sole.³¹ The vessel chosen was a 423-foot World War I freighter, the *Mormacrey*, and the Agriculture Department recommended the Reconstruction Finance Corporation (RFC) oversee the operation. The RFC had been created under President Herbert Hoover in 1931 to strengthen the credit, banking, and railway structures, and to allow business and industry to weather

²⁸ “Coordinator of Fisheries Launches Program for More Fish in Forty-three” *Pacific Fisherman*, March, 1943, 13.

²⁹ Thomas Wolff, *In Pursuit of Tuna: The Expansion of a Fishing Industry and Its International Ramifications--the End of an Era* (Tempe, Arizona: Arizona State University, Center for Latin American Studies, 1980), 7.

³⁰ Arthur F. McEvoy, *The Fisherman's Problem: Ecology and Law in the California Fisheries* (Cambridge: Cambridge University Press, 1986), 182-3.

³¹ *The Seattle Times*, March 23, 1945.

“unexpected shocks and retarding influences.”³² It was the obvious choice to finance a very risky, large-scale experimental venture like the first American mothership, and \$2 million was committed to the project. But the conversion had not been completed by the time the war ended, raising the question of what to do with the ship.

With the end of the war in Europe in June of 1945, and the end in sight in the Pacific, the Agriculture Department withdrew its support for the floating cannery project. The conversion was well along and the U.S. Fish and Wildlife Service, the State Department, and the U.S. Navy all recommended that the RFC continue with the project of helping the fishing industry to develop in the Bering Sea.³³

5.3 Harry S. Truman Goes Fishing

The strategic importance of the oceans had been demonstrated during the World War II. The developing science of oceanography had provided vital information for the deployment of submarines and research on oceanography expanded rapidly after the War, especially at the Scripps Institution of Oceanography in San Diego.³⁴ Exploration for offshore oil also intensified and the discovery of new offshore deposits created jurisdictional problems between the

³² Jesse H. Jones, *Fifty Billion Dollars: My Thirteen Years with the RFC (1932-1945)* (New York: The MacMillan Company, 1951), ix.

³³ State Department memo from Mr. Flory re: *SS Mormacrey*, March 29, 1946. NARA RG 59.

³⁴ See Naomi Oreskes and Ronald Rainger, "Science and Security before the Atomic Bomb: The Loyalty Case of Harold U. Sverdrup" *Studies in the History and Philosophy of Modern Physics* 31, no. 3 (2000): 309-69; and Ronald Rainger, "Patronage and Science: Roger Revelle, the U.S. Navy, and Oceanography at the Scripps Institution" *Earth Sciences History* 19, no. 1 (2000): 58-89.

federal government and the states. Drilling off California was well within the three-mile limit because the continental shelf is narrow. But in the shallow Gulf of Mexico, exploration showed oil in portions of the Bahamas Bank, well beyond the three-mile limit. Bills to extend federal jurisdiction were introduced during the war, but failed to pass.

With the end of the war, the pressure on fish stocks might have been relaxed, but it was not. The Alaskan canning industry was eager to get out from under federal control and resume fishing in areas where they had been constrained by lack of manpower and supplies. After 1945, billions in military goods were auctioned off to the private sector, including the fishing industry. The U.S. Navy had commandeered larger fishing boats during the war. Now military vessels were turned over to the industry. These vessels included 30 steel-hulled cutters that were sold into the tuna industry in San Diego, at \$125,000 each; buying a comparable new vessel would cost \$150,000. They also included at least a half-dozen larger boats in Seattle, most of which were used as refrigerated tuna carriers during the 1950s. The additional boats greatly added to fishing capacity, and during the next decade the U.S. steadily increased its share of high seas tuna.

When President Harry S. Truman visited Seattle on June 21, 1945, he went salmon fishing. The trip had been arranged by Truman's friend, Monrad C. Wallgren, a former Congressman who was now governor of Washington. Although Truman didn't catch a salmon, he was photographed with one. (See

Illustration 1, page 221). Manning the presidential rowboat was Nick Bez, a 50-year-old Croatian immigrant who owned several Alaska canneries, two gold mines, and Alaska Southern Airways. Two days after the fishing trip, Washington Senator Warren Magnuson announced that the Defense Plant Corporation would make a \$2 million loan to the newly formed Pacific Exploration Company, headed by Bez, to engage in exploratory deep-sea fishing on the continental shelf off the coast of Alaska.³⁵ “A World War I-era freighter, the *SS Mormacrey*, was renamed the *Pacific Explorer*. Magnuson said that in addition to exploring the “fish potential” of the continental shelf, the floating cannery would also legally establish American rights to the fishing grounds and make it possible for President Truman at some later date to extend the “three-mile limit” to the edge of the shelf and prohibit fishing by other nationalities,” the *Seattle P-I* reported.³⁶

The fishing industry was also vitally concerned with expanding federal jurisdiction. The Seattle-based Alaskan industry wanted resolution of the Japanese question and an expansion of the territorial sea to bring more of it under the control of American fishermen. There was also enormous interest in expanding the American tuna catch off Latin America, but also in the former Mandated Islands. The Marshall, Marianas, and Caroline Islands, vital bases for

³⁵ *The Seattle Post-Intelligencer*, June 23, 1945.

³⁶ *Ibid.*

post-war American foreign policy, had become U.S. Trust Territories in 1946. The Japanese had developed a tuna fishery off the islands in the 1920s, harvesting an estimated 160,000 mt of tuna each year, worth 25 million yen.³⁷

5.4 Conservation Zones in the Ocean

The issues of federal control of offshore oil and the question of fisheries conservation were brought together on Sept. 28, 1945, when Truman signed two proclamations and two companion executive orders. Both policies had been formulated during the last days of the Franklin Roosevelt presidency. The first proclamation dealt with federal claims to offshore oil reserves on the continental shelf. The second dealt with fish, and declared the U.S. had the right to establish conservation zones for the protection of fish in the high seas contiguous to the United States, where fishing activities were fully developed. If a fishery had been developed by Americans, the declaration said the government might act to limit fishing in the area to Americans, in the interests of "conservation." The fisheries proclamation was aimed at keeping Japanese competition out of Bristol Bay. The Truman Proclamation marked an early and significant form of attempted enclosure of the oceans by nation states, anxious to secure harvest rights to the potentially enormous wealth of the high seas.

A month after the proclamations were issued, Mexico adopted a 200-mile territorial water zone. Argentina followed a year later, in October of 1946. Chile

³⁷ Kamakichi Kishinouye, "Contributions to the Comparative Study of the So-Called Scombroid Fishes," *Journal of the College of Agriculture, Imperial University of Tokyo* 8, no. 3 (1923).

acted on June 23, 1947 and Peru six weeks later on Aug. 1.³⁸ Costa Rica took action on Nov. 2, 1949.³⁹ As American tuna boats steadily expanded fishing off Latin and South America, an increasing number of boats were seized by foreign government and accused of violating territorial limits. The Latin Americans accused the tuna boats of overfishing bait stocks and harming the local fisheries. It was an embarrassing series of developments given the national rhetoric about America's interests in conserving fish resources.

With the issuance of the Truman Proclamation, fish were increasingly tied to American foreign policy objectives. The U.S. hastened to establish a claim on the equatorial tuna resource.⁴⁰ There were foreign policy and military concerns around fish in the Atlantic as well. The U.S. had established an air base in Iceland early in the war, with the promise that the Americans would leave voluntarily. The U.S. wished to stay and it vigorously encouraged expanded trade with Iceland, greatly increasing the import of low-cost frozen fillets and undercutting prices for the New England fishing fleet. Fillets also came in from Canada and Norway. The New England industry began pushing its senators and representatives for a tariff to protect their industry.⁴¹ With the end of the war,

³⁸ Charles B. Selak Jr., "Recent Developments in High Seas Fisheries Jurisdiction under the Presidential Proclamation of 1945" *American Journal of International Law* 44, no. 4 (1950): 673.

³⁹ Iceland also took action in 1948, grounding its resolution on the precedent established by the 1945 Truman Proclamation.

⁴⁰ *The Seattle Post-Intelligencer*, April 25, 1947.

⁴¹ Margaret E. Dewar, *Industry in Trouble: The Federal Government and the New England Fisheries* (Philadelphia: Temple University Press, 1983), 46.

foreign policy concerns for the fishing industry expanded to include territorial claims, and access to U.S. markets—at the expense of the American fishing industry.

5.5 The Truman Proclamations

Scholars have been extremely critical of the fisheries portion of the Truman Proclamations. Legal scholar Harry Scheiber called it an "unmitigated disaster for the United States from a diplomatic standpoint."⁴² Legal analyst Ann Hollick claimed the U.S. "was to spend the next thirty years trying to roll back and limit the expansive moves of other states," which the proclamation had stimulated.⁴³ Hollick suggested that the proclamation marked the emergence of the U.S. from a regional power with a coastal orientation to a major maritime power with global concerns. The proclamations were also a departure from other American foreign policy concerns. The U.S. was vitally involved in creating and supporting the new United Nations, as well as more specific humanitarian and relief work through agencies such as the Food and Agriculture Organization of the U.N. With the dawn of the Cold War, the government was also concerned with consolidating its relations with its allies, in the face of the emerging ocean power of the Soviet Union.⁴⁴ But the fisheries proclamation was adopted

⁴² Harry N. Scheiber, *Inter-Allied Conflicts and Ocean Law. 1945-53: The Occupation Command's Revival of Japanese Whaling and Marine Fisheries* (Taipei, Taiwan: Institute of European and American Studies, Academia Sinica, 2001), 10

⁴³ Ann Hollick, *U.S. Foreign Policy and the Law of the Sea* (Princeton: Princeton University Press, 1981), 19.

⁴⁴ *Ibid.*20.

unilaterally, rather than through multilateral negotiations with other states. The result was a cascading series of claims from other countries, based on the U.S. action, and similarly motivated by concerns of “conservation” and overfishing by American boats.

Why did Truman include fisheries in his proclamations? Hollick suggested the motivation lay in the willingness of President Roosevelt to extend U.S. coastal jurisdiction. Roosevelt was sympathetic to the West Coast fishing industry in the dispute with Japan over salmon fishing in Bristol Bay. An early policy suggestion had been closing the sea along Alaska to all foreign fishing. A second proposal considered banning all fishing on the continental shelf, but there was no way to determine how much protection the salmon might need from the Japanese high-seas gillnets. Would 50 miles be enough? One hundred miles? The Americans had no scientific data about salmon migration in the North Pacific to support any particular limit.

Roosevelt may have been sympathetic to West Coast fishermen, but he spent little actual time on the issue. He was concerned with conservation of the resource and the security of the American food supply, but he apparently did not see any problems with how such unilateral actions might be interpreted.⁴⁵ Scheiber argued that the fisheries proclamation was carelessly drafted and reflected inadequate diplomatic consultation.⁴⁶ Hollick argued, and Scheiber

⁴⁵ Ibid. 22.

⁴⁶ Harry N. Scheiber, *Inter-Allied Conflicts and Ocean Law. 1945-53: The Occupation Command's Revival of Japanese Whaling and Marine Fisheries* (Taipei, Taiwan: Institute of European and American Studies, Academia Sinica, 2001), 11.

agreed, the proclamations suffered from the absence of high-level guidance, making them inconsistent with other trends in U.S. foreign policy.⁴⁷ With so many critical and urgent events facing the State Department after the war, the question of what to do about salmon in Alaska was not a high-priority issue. The war had been a chaotic time for the State Department. The War Department conducted its own foreign affairs and Roosevelt often undertook policies without consulting with Secretary of State Cordell Hull. Hull left in late 1944, Roosevelt died in 1945, and during an eight-month period there were three Secretaries of State. Clearly, matters in Washington were muddled.

This is probably not the whole story. It is also likely that Harry Truman, like Roosevelt, was sympathetic to the problems of the Alaskan fishing industry. The Bristol Bay fishery was the nation's most lucrative, and there was the \$27 million that Americans had paid to the Japanese for canned king crab since 1930. If America's future was tied to the Pacific Ocean, then part of the fortune to be made was in catching fish. Nobody knew how many tuna could be caught in the Pacific, but the Japanese had been catching many more fish than the Americans. If Truman had any education on the issues, it is likely that it came from the industry itself and from politicians in the state of Washington who wanted to see the industry expand.

⁴⁷ Ann Hollick, *U.S. Foreign Policy and the Law of the Sea* (Princeton: Princeton University Press, 1981), 45.

It had been no accident that when Truman visited Seattle in June of 1945, three months before he signed the Proclamations, he had been taken salmon fishing. Two days after his fishing trip, Washington Senator Warren Magnuson announced the \$2 million loan to Bez.⁴⁸ The timing of the loan may have had nothing to do with the Presidential visit to Seattle. But the *Pacific Explorer* was certainly in keeping with the Proclamations intentions of establishing fisheries claims in the Pacific. "Government-backed firm in Seattle outfits floating cannery to wrest crabmeat monopoly from Japs in Alaskan waters," was the headline in *Business Week* on Aug. 18, 1945.⁴⁹

Between the time the *Pacific Explorer* had been conceived in 1943 and its transformation into a post-war project, the project had been substantially altered. The total price tag was pushed to \$4.75 million. There were new political objectives as well, a trip to the Central Pacific, to the Trust Islands, to fish for tuna.⁵⁰ The Americans were not only taking control of the resources directly off their coast, they intended to expand fishing deep into the Pacific, making a bid to replace the Japanese as the ocean's major fishing nation.

⁴⁸ *The Seattle Post-Intelligencer*, June 23, 1945.

⁴⁹ *Business Week*, Aug. 18, 1945.

⁵⁰ *The Seattle Post-Intelligencer*, April 25, 1947.

5.6 The Pacific Fisheries Frontier

The war had transformed the West. Up until 1940, most of the West, including California, had an essentially colonial economy, with an emphasis on extraction of raw materials that were sent East for processing. After the war, the West emerged with a more diversified and developed economy, with its own manufacturing capabilities, as well as new industries like aeronautics, shipbuilding, electronics, and atomic energy. “The American Dream of unlimited opportunity in the West—muted during the Great Depression—was revitalized by World War II,” writes historian Gerald D. Nash.⁵¹

Fisheries were part of that transformation and one of the chief architects was Wilbert McLeod Chapman, now 38, and Curator of Fishes at the California Academy of Sciences in San Francisco. Chapman had been born in 1910 in Kalama, Washington, on the Kalama River, a tributary of the Columbia River. Chapman’s father was foreman of Doty Fisheries, associated with the Columbia Rivers Packers Association, headquartered in Astoria, and the largest fishing company on the West Coast. “He has never been able to entirely escape from the effects of this early association with the commercial fisheries, or stray very far from the fish business,” Chapman wrote about himself in an undated biographical sketch that was probably produced about 1948, before his State Department appointment.⁵² (See Illustration 2, page 222).

⁵¹ Gerald D. Nash, *World War II and the West: Reshaping the Economy* (Lincoln: University of Nebraska Press, 1990), 17.

It is possible that he worked at the plant, unloading salmon from gillnet boats, while he was at high school, and perhaps summers after he went to the University of Washington in 1928. He may have been initially attracted by the college's focus on the practical aspects of fisheries technology and management, but by the time he graduated in 1932 with a Bachelors of Science, he had chosen systematic ichthyology, the classification of fishes, as his major. He received a Masters of Science in 1933 and a doctorate, under Leonard Schultz, in 1937.

After his graduation, Chapman worked for W.F. Thompson at the International Fisheries Commission, then with the Washington Department of Fisheries. He was rejected for military service because he was blind in one eye and had a lung ailment. In 1943, he was offered the job of Curator of Fishes at the San Francisco Academy of Sciences. Almost immediately, he was offered a position with the Office of Economic Warfare, to search for fish to feed American troops in the South Pacific.⁵³ He spent eighteen months in the Pacific, and he saw what he knew to be commercial quantities of tuna. He returned to San Francisco with a burning zeal to develop American fishing interests in the equatorial Pacific, especially the former tuna grounds in the Mandated Islands, the Caroline, Marshall, and Marianas.

"From New Caledonia up through the New Hebrides and Solomon's to Green Island and back to Guadalcanal I traveled by small fishing craft, trolling all the way," he wrote in April 1945 from his desk in San Francisco. The locations

⁵² W.M. Chapman papers, 1852-1,2,3. Box 4, Folder 12, University of Washington Special Collections.

⁵³ Ibid., Box 4, Folder 12.

might have been exotic but the fish weren't—Chapman saw plenty of skipjack and yellowfin tuna, two of the fish caught by the Southern California tuna fleet. The conventional biological wisdom was that abundant quantities of fish were only found in the cold and temperate waters of the world's oceans. But after eighteen months in the equatorial Pacific, Chapman knew that wasn't true. "The time to act on this matter is now, while the international matters in the Pacific are in a state of flux and while the United States has bargaining power," he wrote in a letter that would be widely distributed.⁵⁴

It is desirable that the State Department and Congress be advised concerning these matters and that sufficient impetus be given so that something will be done about it. We have the opportunity at the present moment of securing to our nation one of the principal food resources of the world. Delay of a year or so in concluding such negotiations could easily mean the loss of this opportunity.⁵⁵

In letter after letter, to politicians, scientists, canneries, and to fishing and labor groups, Chapman poured out a vision of tuna in heavy commercial quantities. Development would require island bases, such as the ones the U.S. Navy was planning for what would become the Trust Territories. Chapman saw the California tuna fleet expanding to the Marquesas and French Oceania, while the Hawaiian fleet would expand through what would become the Trust Territories, where the Japanese had developed the fishery before the war. It might take twenty-five years for the vision to be fully realized, but "the ground work must be

⁵⁴ Papers of Sen. Warren Magnuson, 3181-3. Box 50. Folder 21, University of Washington Special Collections.

⁵⁵ "Dr. Chapman's Report Pacific Fisheries, etc." American Tuna Association files, Scripps Institution of Oceanography Library, University of California, San Diego. Accession 90-11. Box 26, (Hereafter ATA files).

laid now, while our bargaining power in world politics is at its apex. Foresight now will secure to us a rich resource in the future.”⁵⁶ For Chapman, the Truman Proclamation offered enormous promise. If American fisheries could be established in the Trust Islands, the U.S. would have a claim to the tuna resource should the Japanese be allowed to return to the waters they had fished before the war.

5.7 Military Support for the Industry

The Southern California tuna fleet had been badly hit by the war. Many of the larger boats had been commandeered by the U.S. Navy. August Felando, the last manager of the American Tuna Association, estimated that by 1942, some 70 percent of the fleet’s tonnage was in military service. The fleet had a remarkable war record, towing to safety eleven damaged warships, shelling enemy positions, shooting Japanese planes, and rescuing survivors of sunken ships. When President Franklin Roosevelt ordered frozen turkeys for the troops on Guadalcanal Island as a holiday treat, they were delivered by the *Paramount* and her skipper, Edward X. Madruga.⁵⁷

During early 1944, the Navy gave permission for a series of new tuna boats to be built and seventeen vessels entered the fishery in 1945. Another 30 YP-class (Patrol Class) boats were ordered by the Navy, and once the war

⁵⁶ W.M. Chapman papers, 1852-1,2,3. Box 4, Folder 12, University of Washington Special Collections.

⁵⁷ August J. Felando, “California’s Tuna Clipper Fleet: 1918-1963, Part 3” *Mains’L Haul* 33, no. 3 (1997): 24. Also see Daniel M. Shapiro, “The Pork Chop Express:” San Diego’s Tuna Fleet, 1942-1945, Masters of Arts Thesis, University of San Diego, 1993.

ended, they were offered to fishermen. The new boats had bigger engines, allowing them to operate further offshore, and making it practical to purse seine in the ocean. Brine refrigeration systems were installed, allowing the tuna to be held for a longer period of time. The world's largest purse seiner, the 111-foot *Anthony M* was built in Alameda in 1946 for Anton Misetich of San Pedro.⁵⁸ Tuna prices had reached record levels and yellowfin and skipjack production went from 25 million pounds in 1925 to 170 million pounds in 1940.⁵⁹ Seiners were operating side by side with bait boats off Mexico and taking a greater percentage of the catch. By 1946, *Pacific Fisherman* reported that American fishing capacity had been restored to pre-war levels.

But while the industry had been restored by 1946, the fish stocks had not. Before World War II, the California sardine fishery had been one of the most lucrative in the world. One-quarter of all the fish landed in the U.S. were sardines, supporting an extremely large and powerful fishing and processing industry. Some sardines were canned and eaten, but the bulk of the catch was turned into fishmeal, used for fertilizer and animal food, while the oils were extracted for industrial purposes. By 1939, the industry employed 40,000 people and generated revenues of \$600 million a year.⁶⁰ By 1943, there were 206 seiners

⁵⁸ *Pacific Fisherman*, 1947 Yearbook, 151.

⁵⁹ August J. Felando, "California's Tuna Clipper Fleet: 1918-1963, Part 3" *Mains'L Haul* 33, no. 3 (1997): 30.

⁶⁰ *Los Angeles Times*, "Fleet of Six Ships Launches Biggest Fish Hunt in History" June 19, 1949.

fishing sardines for seventy-five plants, yet the War Food Administration ordered that the harvest be increased by one-third, to four million cases, with 100 percent of the catch going to the military.⁶¹

For almost two decades, scientists at the California Department of Fish and Game had argued that the extreme fluctuations in the sardine catch were evidence that too many fish were being harvested.⁶² It was the same argument made by Willis Rich and Edward Ball about the fluctuations in Bristol Bay salmon catches, and also made by W.F. Thompson about the fluctuations in halibut catches. But the biologists were unable to control events within the fishery.

During the 1930s, floating reduction plants, or floaters, began operating outside California territorial waters. They were not subject to any operating regulations or quotas, and paid no state fees. Shore-side canners argued they could not compete economically with the floating processors unless the catch limits were liberalized. It was the height of the Depression, and the Fish and Game commissioners refused to curtail the catch. They had the support of federal scientists, who were concerned with the development and maintenance of commercial fishing. When the U.S. entered into World War II, the federal

⁶¹ Arthur F. McEvoy, *The Fisherman's Problem: Ecology and Law in the California Fisheries* (Cambridge: Cambridge University Press, 1986), 153.

⁶² John Radovich, "The Collapse of the California Sardine Fishery: What Have we Learned?" *California Cooperative Oceanic Fishery Investigations Reports* 23 (1982): 59.

government assumed responsibility for managing the fishery, with the object of maximizing production of protein during the war. The stock collapsed. The 1945-46 harvest was only 121,341 tons, a sixth of the historic high.⁶³

The collapse of sardines left many of the San Pedro purse seine fleet with few options. Many of them turned to tuna, and began to join the San Diego bait boats as they fished off Mexico and Costa Rica, a development that was resented by the bait boat fleet. The California fishing industry was famously fragmented, divided not only by ethnic communities, but by the different fishing gear they used and the policies involved. Fishing crews and cannery workers were organized into unions; the largest was a CIO affiliate. The interests of crew members were sometimes different than the interests of vessel owners or packers. The packing sector was divided regionally into loose associations of small competing firms, with a few large firms packing several varieties of fish.⁶⁴

The bait boat owners were making increasing payments to the governments of Mexico and Costa Rica for the baitfish they needed before they could go fish for tuna. Purse seiners did not need bait. The increased number of seiners upset the Mexican and Costa Rican governments, who saw the boats as fishing for free, and it upset the bait boat owners who had to pay licensing fees to catch bait.

⁶³ Arthur F. McEvoy and Harry N. Scheiber, "Scientists, Entrepreneurs, and the Policy Process: A Study of the Post-1945 California Sardine Depletion" *Journal of Economic History* 44, no. 2 (1984): 395.

⁶⁴ *Ibid.*, 399.

The bait boats, represented by the San Diego-based American Tuna Association, negotiated its own tense agreements with the countries involved; the State Department had not been party to the negotiations before the war. The boats negotiated what they would pay per ton of baitfish. Faced with the prospect of competition from the seine boats, they acted in late 1945 to convince Mexico and Costa Rica to ban purse seining in their waters. The bait boats argued that purse seining was destructive, killing large numbers of porpoises, and frequently taking more fish than they could accommodate in the holds.⁶⁵

The Truman Proclamation further increased tensions. In 1935, Mexico had issued a decree claiming sovereignty over territorial waters of nine miles, based on an interpretation of the 1848 Treaty of Guadalupe Hidalgo, which set the boundary between Mexico and the U.S. A month after the Proclamation, in October of 1945, Mexico announced ownership of its continental shelf, interrupting bilateral fishing talks that had been underway between the two countries for some time. Mexico then banned seining by American boats. Under pressure from the tuna industry, the State Department told Mexico it would only recognize the territorial claim if Mexico recognized the established interests of American fishermen.⁶⁶ The federal government was now in the business of guaranteeing the right of American boats to fish in foreign waters.

⁶⁵ Richard Van Coker to Donald D. Kennedy, Jan. 8, 1946 NARA RG 59, 811.628/1-846.

⁶⁶ Ann Hollick, "The Roots of U.S. Fisheries Policy," *Ocean Development and International Law Journal* 5, no. 1 (1978): 69.

5.8 Transforming Global Fisheries

It had taken more than fifty years from T.H. Huxley's 1883 opinion about the inexhaustibility of the stocks for scientists to ascertain that Huxley had been wrong. The great sea fisheries were not only exhaustible, they were being rapidly exhausted. By the 1940s, the pattern was clear. To keep a fishery profitable, the boats needed to continually fish new waters or new stocks of fish. Once the first rush of fishing subsided, it was becoming harder and harder for boats to maintain profits. This was not only true in the North Sea, where fishermen had been fishing for hundreds of years, but it was true in relatively new fisheries as well, as the work of W.F. Thompson on halibut had shown during the 1930s.

Scientists responded to this information in different ways. In Britain, E.S. Russell and Michael Graham had been concerned about the social impact on fishermen facing increased costs and declining catches. Both were also concerned that fishing without regulations wasted fish. Catching fewer, larger fish, was worth more to fishermen than catching many small fish, because some of them would have to be discarded because they were not of a marketable size.

But American scientists, facing fluctuating runs in all of the major West Coast fisheries, did not come together to press for coordinated management action. This is partly because of the bifurcated jurisdiction between state and federal agencies. While California Fish and Game scientists pushed during the 1930s for restricting the sardine catch, they were opposed by the federal scientists who wanted to support the canning industry. Management authority

was also contested in Alaska, where the canning industry supported the U.S. Fish and Wildlife Service. The struggle over control of Alaskan fisheries was only one of the issues in the struggle between the federal and the territorial government.

Individual scientists who expressed concern about overfishing, such as Charles Gilbert and Willis Rich, were based at universities, and not involved in day-to-day fisheries management. The exception was W.F. Thompson, who headed the International Pacific Halibut Commission, created by the Canadian and U.S. governments in the wake of halibut declines during the 1920s. By 1945, with the collapse of Bristol Bay salmon runs, the canning industry approached Thompson to come up with a scientific plan to restore the runs.

The push to harvest stocks to the maximum during the war normalized the idea that fish runs were to be managed for maximum harvest, justified by the extreme need for protein during the war. With the coming of peace, the same justification, the need for protein, would be used to further normalize the idea that runs were to be harvested to their maximum point.

The end of World War II is generally seen as marking a turning point in global fishing, setting the stage of the development of the modern industrial fisheries. The technology developed during the war was rapidly transferred to the fishing industry, greatly expanding its ability to catch and process fish. But this dissertation shows that the industrial fisheries were well-developed during the 1930s, at least in Japan, the U.S., and Britain. With the development of

refrigeration techniques, distant water fisheries greatly expanded capacity before the war, setting up the tensions that played a significant role in developing fisheries science and management during the coming decades.

But the war does mark an important turning point in the relationship between fishing and governments, especially in the U.S. Before the war, the tuna industry negotiated its own agreements with Mexico and Latin America, paying a flat rate on each ton of baitfish caught. With the adoption of the Truman Proclamation in 1945, and the Latin American reactions, fees for baitfish were suddenly an issue involving the State Department. Fishing boats also became a new means to attain foreign policy objectives. The voyage of the *Pacific Explorer* for king crab off Alaska was a way to stake a territorial claim against the Japanese, while a proposed trip to the equatorial Pacific by the *Pacific Explorer* was to be a claim on the region's tuna stocks. The opening of American markets after the war for fish products from Japan, Iceland, and Norway, had a significant impact on the American fishing industry. The tension between foreign and domestic policies resulted in the creation of a series of subsidies, designed to increase the efficiency of fishing and the expansion of fishing onto new stocks. The thrust of American post-war fisheries policy was expansionist, and this animated the development of post-war fisheries science.

The focus of Pacific fisheries scientists also seemed to shift after the war, from uncovering the secrets of fluctuating catches to finding new fish for harvest. W.F. Thompson was prescient in this regard in a poignant Christmas letter he

wrote to former students at the School of Fisheries in December of 1944. The school had been decimated by the war, with only a handful of entering freshmen.

Our fisheries world has changed somewhat—there is more talk of biologists who are serving as coordinators between industry and the war program than there is of conservation and research. There seems to be somewhat of a moratorium declared on some of the more serious problems.⁶⁷

Efforts at conserving fish were erased by the need to increase protein harvested from the sea during the war. And after 1945, the influx of government money into fisheries shifted the emphasis from understanding what was going on with the fish stocks to managing the changes that were taking place. The emphasis was on the development of new fisheries, increasing the efficiency of the fleet, and finding new ways to process and market different species of fish.

⁶⁷ Robert R. Stickney. *Flagship: A History of Fisheries at the University of Washington*. (Dubuque, Iowa: Kendall/Hunt Publishing Co., 1989). 37.



Illustration 2: President Harry Truman goes salmon fishing. Salmon magnate Nick Bez rowed the presidential rowboat and became a national figure. (Photo courtesy of the Truman Presidential Library).



Illustration 3: Wilbert McLeod Chapman, 1948.

(Photo courtesy of the University of Washington Special Collections).



13a. G. M. Graham, Director,
1945–58.

Illustration 4: Michael Graham, Director of Research, Lowestoft, 1945-1958.

(Photograph courtesy of the Ministry of Food, Agriculture, and Fisheries).

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Chapter Six

Increasing Capacity in Japan

It is not our object to solve all the fisheries problems of Japan. But, we should stimulate their thinking and initiative to that end that many pressing and serious problems facing them today will be surmounted by their own efforts.¹

SCAP, Dec. 31, 1946

Two weeks before the end of the Second World War, on July 26, 1945, Harry Truman, Winston Churchill, and Josef Stalin met in Berlin and decided many of the policies that would shape the post-war world. The Allies were far more concerned over what to do with Germany and Eastern European territorial claims than they were with Japan. Eleven nations had declared war on Japan, but the Big Three would set the terms for what would follow. The policy was laid out in thirteen terms, one of which read:

(11) Japan shall be permitted to maintain such industries as will sustain her economy and permit the extraction of just reparations in kind, but not those industries which would enable her to re-arm for war. To this end, access to, as distinguished from control of raw materials shall be permitted. Eventual Japanese participation in world trade relations shall be permitted.²

One of the most important of pre-war raw materials was fish, which would prove to be one of the chief vehicles for allowing Japan to resume world trade.

From Potsdam, on Aug. 2, 1945, the Allied commanded that Japan surrender unconditionally. The American Occupation of Japan began when General

¹ Supreme Commander Allied Powers, Memorandum, Dec. 31, 1946. NARA RG 331, Box 8866, Folder "The Northern Area File."

² Charles L. Mee, *Meeting at Potsdam* (New York: M. Evans & Company, Inc., 1975), 314.

Douglas MacArthur landed at the Atsugi Airfield on Aug. 30 and established his headquarters at Yokahama. The formal surrender onboard the battleship *Missouri* came on Sept. 2.³ The Supreme Commander Allied Powers, or SCAP, as the title is used to refer both to General MacArthur and to the military occupation, set about dealing with the immediate crisis of feeding a starving people. An initial priority was to increase the food supply, by restoring the Japanese fishing industry.

The Japanese government and its highly organized and integrated fishing companies immediately began to push for access to the stocks they had fished before the war. SCAP's humanitarian desire to increase the food supply led to preferential policies that rebuilt the industry to pre-war capacity by early 1947, placing enormous pressure on local stocks, especially in the East China Sea. As SCAP sought to control the volatile fishing industry it had restored, American scientists belittled Japanese fishing science and imposed the American-style fisheries conservation goals, of not harvesting more than the stocks could sustain. Despite its pre-war legacy of having the most extensive marine research system in the world, repudiating it and publicly embracing American fisheries science was the price Japan would have to pay to resume fishing on the high seas.

³ John Gunther, *The Riddle of MacArthur: Japan, Korea, and the Far East* (New York: Harper & Brothers, 1950), 17.

6.1 Feeding Japan

Nowhere was the drastically shrunken Japanese Empire felt more keenly than by the fishing industry. The evocative historian Edwin Reischauer, who lived in Japan after the war, recalled: "Once stretching a sixth of the way around the globe from northern Manchuria to the eastern extremities of the Marshalls, the Japanese Empire has been reduced to a thin sliver, scarcely one eighth of its former width and less than half its former length."⁴ Some of its most profitable fisheries were gone: the high-seas salmon fishing off Kamchatka, the bottomfish and king crab of Bristol Bay, herring and salmon off Sakhalin, tuna from the Marshall, Caroline, and Mariana Islands, and the catches off Korea and China, that had provided so much of the daily food supply. For the Japanese fishing industry, the loss of the war looked like ruin indeed.

Two weeks after MacArthur landed, typhoons swept across Southeast Japan, flooding rice fields and damaging the crop.⁵ What food had been stockpiled during the war had been looted by government and industry officials, contributing to commodity shortages for the next two years. The government printed money to discharge its obligations, setting off a cycle of hyperinflation. One of MacArthur's first acts was to set up Army kitchens and seize some of the 3.5 million tons of food the American Army had stockpiled in the Pacific to feed

⁴ Edwin O. Reischauer, *The United States and Japan* (Cambridge: Harvard University Press, 1950). 241.

⁵ Supreme Commander for the Allied Powers, "Summation of Non-Military Activities in Japan and Korea, No. 1," (Tokyo: Supreme Commander for the Allied Powers, 1945) 44.

the Japanese through the first winter.⁶ "We fed the Japanese but we didn't intend to feed them forever," MacArthur wrote. "I directed my staff to work out the plans we needed to make Japan self-sufficient as soon as it was humanly possible."⁷ One way to do this was to restore the Japanese fishing empire.

Food was not the only problem. Extensive Allied bombing throughout most Japanese cities had reduced large areas of them to rubble. "Tokyo itself began with row upon row of tiny shacks, put together from the strips of metal and stones which had survived the raging fires. The shanties stretched endlessly across the flatlands, and tens of thousands of people lived in them," wrote William Sebald, the State Department attaché stationed in Japan after the war.⁸ The population of Tokyo had shrunk to 2.8 million, from 6.7 million, as destitute bomb victims and terrified neighbors fled to the countryside.⁹ The US hadn't bombed the business buildings, hotels or mansions, since pre-war planning had anticipated that they would be needed. The better neighborhoods also had not been bombed, and were designated as housing for the flood of SCAP officers, soldiers, and bureaucrats who soon began to pour into Japan.¹⁰

Historian Michael Schaller estimated that the actual physical destruction from bombing was the smallest part of Japanese manufacturing problems. Machinery had not been maintained. Much of the textile industry was smelted to

⁶ Robert Harvey, *American Shogun: General MacArthur, Emperor Hirohito and the Drama of Modern Japan* (Woodstock and New York: Overlook Press, 2006). 333.

⁷ Douglas MacArthur, *Reminiscences* (New York: McGraw-Hill, 1964). 307.

⁸ William J. Sebald, with Russell Brines, *With MacArthur in Japan: A Personal History of the Occupation* (New York: W.W. Norton and Co., 1965), 39.

⁹ Reischauer, *The United States and Japan*. 207.

¹⁰ William J. Sebald, with Russell Brines, *With MacArthur in Japan: A Personal History of the Occupation* (New York: W.W. Norton and Co., 1965), 39.

make arms. There was technological obsolescence, with nylon now replacing silk. A quarter of all Japanese industry had been dependent on cheap, imported raw materials, as well as a guaranteed market in Taiwan, Korea, Manchuria, and North China.¹¹ Coal production had all but collapsed by the end of the war, causing an acute energy crisis. SCAP immediately repatriated about 9,000 Chinese and 145,000 Korean miners, many of whom had been imported as virtual slaves to provide coal for the war.¹² By 1943, consumer goods virtually vanished from the economy.

Production slowed in other Asian countries as well, forcing the Japanese to import high-priced commodities like cotton from the U.S. The profits from restricted textile exports weren't enough to cover food, fuel, and industrial materials. "Japan's foreign trade had not just been temporarily suspended; it was for all practical purposes dead," wrote Reischauer. "And with its death, the heart of the Japanese economy almost stopped beating, and Japan sank into an economic coma, from which only a strong revived flow of life-giving foreign trade can ever raise her."¹³

The Americans had also banned any industrial program that might have a military application, such as the synthetic oil and synthetic rubber industries, atomic research, and small industries such as those producing bearings. There

¹¹ Michael Schaller *The American Occupation of Japan: The Origins of the Cold War in Asia*. (Oxford: Oxford University Press, 1985). 80-81.

¹² Chalmers Johnson. *MITI and the Japanese Miracle: The Growth of Industrial Policy, 1925-1975* (Stanford: Stanford University Press, 1982), 179.

¹³ Edwin O. Reischauer, *The United States and Japan* (Cambridge: Cambridge University Press, 1950), 210.

were major limitations on the steel, chemical, and machine tool industries, as well as the food imports that had come from the satellite countries. "Now the Japanese no longer have the fisheries of the Kuriles, the pulp of Sakhalin the sugar and rice of Formosa, or the rich minerals and agricultural products of Korea and Manchuria," wrote Reischauer. "These areas are no longer economic tributaries to Japan, and the Japanese cannot exploit them for their own benefit."¹⁴

The Japanese people were clearly starving and the U.S. Army financed food relief shipments valued at between \$350 million to \$400 million a year. But the fragile economy was also saddled with an enormous expense: having to cover all the Occupation expenses that could be paid in yen, housing for officers, the building of installations, furnishings, transportation and communications, coal, water, gas, and electricity, "which the Americans in Japan have consumed in prodigious quantities according to Japanese standards."¹⁵ Occupation costs ranged from a quarter to a fifth of the annual Japanese budget, and would be a growing source of tension between the two countries. To begin to respond to the myriad problems, and to feed the Japanese people, MacArthur determined to rebuild the Japanese fishing fleet.

¹⁴ Ibid. 298.

¹⁵ Ibid, 302.

6.2 Transforming Japan

The Americans had begun planning for the occupation of Japan as early as 1942, starting with a research division in the State Department.¹⁶ The occupation plan called for the establishment of nine special sections to advise on policies: Economic and Scientific, Civil Information and Education, Natural Resources (agriculture, forestry, fishing and mining); Public Health and Welfare, Government, Legal, Civil Communications, Statistical and Reports, and Civil Intelligence.¹⁷ The Natural Resources section was headed by Col. Hubert Schenck, a paleontologist from Stanford University. After 1947, the fisheries section was headed by William C. Herrington.

The Americans arrived in Japan with a series of policies designed to completely transform Japanese life. Japan was to be demilitarized and disarmed. The economy was to be transformed, the large industrial and banking combines dissolved, and the educational system modernized. Society was to be transformed from feudal and authoritarian to democratic, labor unions encouraged, and women given the right to vote, hold property, enter higher education, and run for public office. Four million acres of land was bought and sold cheaply to farmers.¹⁸

¹⁶ Edwin M. Martin, *The Allied Occupation of Japan* (Stanford: Stanford University Press, 1948). , 5-7.

¹⁷ Supreme Commander for the Allied Powers, "Summation of Non-Military Activities in Japan and Korea, No. 1," (Tokyo: Supreme Commander for the Allied Powers, 1945) 3.

¹⁸ Walter LeFeber. *Clash: U.S.-Japanese Relations Throughout History* (New York: W.W. Norton & Company, 1997), 263-266.

General Douglas A. MacArthur had issued his first commands about the Japanese fishing industry while he was still in Manila, ordering all boats to cease movements and await instructions.”¹⁹ Recognizing the urgent need for protein, he allowed boats to resume fishing, in an extremely restricted portion of coastal waters. It took a year for SCAP to authorize what was called the MacArthur fishing zone, formally established in June of 1946, which confined the fleet to a fishing area that was about 30 percent of what it had been before the war.²⁰ The initial MacArthur Zone extended eastward to 165 degrees E. longitude and southward to 24 degrees N. latitude. (See Illustration 5, 268).

It might be thought that not many of the large fishing boats were left, thanks to the Allied policy of economic strangulation that destroyed most of the Japanese fishing fleet, Navy, and merchant marine, choking off supplies of basic foodstuffs from Korea, Formosa and China.²¹ Up to one-quarter of the fish that fed Japan was caught by Japanese fishermen working in the coastal waters off Korea, Formosa, and China. But many of the boats in Japanese ports had survived the bombing, albeit with various degrees of damage. Many of the larger vessels had indeed been sunk, and many of the remaining larger boats were stranded in Korea, Formosa, and Kamchatka when the war ended. The fleet had lost access to two of its most productive fishing grounds: the salmon grounds

¹⁹ Harry N. Scheiber, "Origins of the Abstention Doctrine in Ocean Law: Japanese-U.S. Relations and the Pacific Fisheries, 1937-1958," *Ecology Law Quarterly* 16 (1989). 37.

²⁰ Weissberg Guenter, *Recent Developments in the Law of the Sea and the Japanese-Korean Fishery Dispute* (The Hague: Martinus Nijhoff, 1966). 6

²¹ John W. Dower, *Embracing Defeat: Japan in the Wake of World War II* (New York: W.W. Norton & Company, 1999)

north of Hokkaido (now controlled by the Soviets) and the Mandated Islands, south of the Hawaiian Islands (now controlled by the Americans). The Soviets, in fact, had demanded that a portion of the home island of Hokkaido be turned over to them, a proposal that both Truman and MacArthur flatly rejected.²² The Japanese were also banned from fishing regionally, off Korea and China.

But there was a surprising number of fishing boats left, most of them small, made of wood, powered by sail or small engines. In its *Summation of Non-Military Activities in Japan and Korea*, SCAP estimated that 40 percent of the fishing capacity had been lost. The 1939 fleet had consisted of some 366,000 boats and other vessels, of which about 62,000 were propelled by engines.²³

Some ports had fared badly. The second edition of the SCAP monthly summary, in November, 1945, found that five of the thirteen large trawlers and 76 of the 177 small trawlers based at Tobata, Shimonoseki, and nearby ports were damaged and undergoing repairs. None would be available for the winter fishing season. But an aerial survey of the fishing ports between Shimizu and Choshi revealed that bombing had not damaged most of the smaller fishing ports and large numbers of small hand and sail propelled boats were able to operate in the inshore areas.²⁴

²² Michael Schaller, *The American Occupation of Japan; the Origins of the Cold War in Asia* (New York, Oxford: Oxford University Press, 1985). 18.

²³ Supreme Commander for the Allied Powers, "Summation of Non-Military Activities in Japan and Korea, No. 1, 1945, 47.

²⁴ Supreme Commander for the Allied Powers, "Summation of Non-Military Activities in Japan and Korea, No. 2, 1945, 47.

SCAP embarked on three successive large-scale boat building programs to restore the fleet. The restoration was so successful that on June 16, 1947, SCAP announced that no further large-scale boat construction programs would be authorized. However, a more limited program was allowed to replace unserviceable and obsolete vessels.²⁵ Once fishing boat production was established, it was difficult to interrupt.

The Monthly SCAP Summary Reports through 1946 and 1947 included figures on how many new or repaired vessels were being added to the fleet each month. The Bureau of Fisheries goal for 1948 was to have 257,844 fishing boats operational, totaling 893,587 gross tons. Meeting the goal would mean building 34,030 wooden vessels and 1,214 steel boats.²⁶ Japan's enormous ship-building capacity, estimated at its peak in 1944, when 1.5 million gross tons of shipping was constructed, was turned to building fishing boats. Since SCAP policy was to discourage a return to heavy industry or to anything that might signify that it could be used for military means, building fishing boats was an important industry.²⁷

The lack of gasoline and other material, such as netting, was as great an impediment to the resumption of fishing as the damage to the fleet. The initial allotment of fuel to Japan was only 20,000 barrels of kerosene and 70,000 barrels of lubricating oil. A substantial amount of the allocation was made available to fisheries. Military boats were turned over to the fishing industry,

²⁵ Press Conference Notes, July 16, 1947. NARA RG 331, Box 8866.

²⁶ Supreme Commander for the Allied Powers, "Summation of Non-Military Activities in Japan and Korean, No.6, 1946. 70.

²⁷ Michael Schaller, *The American Occupation of Japan: The Origins of the Cold War in Asia* (Oxford: Oxford University Press, 1985). 19.

including 80 amphibious landing craft in Nigata.²⁸ More than 100 boats belonging to Japanese fish companies were in Korea, which wanted to claim the boats for reparations.²⁹

Food was scarce; one of the Occupation's first tasks had been to establish price controls, leading to the creation of a black market, where fish could be sold for prices up to five times greater than the Occupation limits. Reischauer wrote that while city dwellers were destitute and starving, the peasants in the countryside with food to sell became relatively well-off.³⁰ It must have been the same for small fishermen. There was a ready market for anything that could be caught, and fishing was one of the few industries given regular access to a very precious commodity, fuel.

6.3 The Resumption of Whaling

Whaling was authorized in the vicinity of the Bonin and Kusan Islands in November of 1945. A far more controversial SCAP decision came on Aug. 6, 1946, when whaling was expanded to include Antarctic waters. The Japanese did not begin pelagic whaling in Antarctica until the 1934-35 season; by 1939, they had six factory whaling operations in Antarctic waters. The League of Nations in the 1930s had recommended international standards, not killing

²⁸ Supreme Commander for the Allied Powers, "Summation of Non-Military Activities in Japan and Korea, No 1, 1945, 75.

²⁹ Supreme Commander for the Allied Powers, "Summation of Non-Military Activities in Japan and Korea, No 3, 1946, 48.

³⁰ Edwin O. Reischauer *The United States and Japan* (Cambridge: Harvard University Press, 1950), 211.

pregnant females and calves, or endangered Right whales, standards that the Japanese had ignored.³¹ The Far Eastern Commission, composed of representatives from the eleven nations that had declared war on Japan, objected vehemently to the resumption of whaling. However, MacArthur frequently ignored objections from the Commission, and he ignored the protests over the resumption of Antarctic whaling.³² In an attempt to defuse the criticism, the State Department announced that the Japanese, who had ignored the directives of the League of Nations regarding the slaughter of females and calves, would comply with further regulations set by the IWC, and that American observers would be onboard to ensure compliance with all regulations..

In November of 1947, two factory ships, 12 “killer boats,” and seven carrier boats left for Antarctica.³³ Four American and Australian observers were onboard. By December, a first installment of 900 tons of whale oil was sent to Bremen for distribution in the British and American occupied zones. The first shipment of whale meat and blubber arrived in Japan in January, 1948.³⁴ A second expedition, in November of 1947, was larger and carried observers from SCAP, the United Kingdom, Norway, France, and Australia.³⁵

³¹ George L. Small *The Blue Whale* (New York: Columbia University Press, 1971), 152.

³² Harry N. Scheiber, "Origins of the Abstention Doctrine in Ocean Law: Japanese-U.S. Relations and the Pacific Fisheries, 1937-1958," *Ecology Law Quarterly* 16 (1989), 40.

³³ Supreme Commander for the Allied Powers, "Summation of Non-Military Activities in Japan and Korea, No. 28, January, 1947, 117.

³⁴ Supreme Commander for the Allied Powers, "Summation of Non-Military Activities in Japan and Korea, No. 28, January, 1948,

³⁵ Supreme Commander for the Allied Powers, "Summation of Non-Military Activities in Japan and Korea, No. 42, November, 1948.

Resumption of Antarctic whaling produced 42 million pounds of meat for Japan during 1946 and 1947, as well as oil sold on the world market, a small offset to the costs of the Occupation.³⁶ But the second expedition was a financial disaster. The weather had been bad and catch rates were low. The fleet returned to Japan in April of 1948. Taiyo Gyogyo had lost 76 million yen, while Nippon Suisan lost 260 million yen. Nippon Suisan had debts of 429 million yen to the Reconstruction Finance Bank, loans that had been taken out to equip the Antarctic whaling fleet. A further loan was rejected. It was one thing to resume Antarctic whaling; resuming it and losing money was another thing.

6.4 SCAP and American Science

One of the most powerful weapons SCAP brought to bear on Japan after the war was American science. The development and deployment of atomic weapons certainly signaled America's superior scientific, technological, and organizational capabilities. When Prince Higashikuni was named prime minister on Aug. 16, 1945, he declared that the biggest shortcoming Japan faced was the lack of science and technology. The next day, the minister of education announced there would be an "emphasis on basic science" in the postwar school system. Two days after the surrender in Tokyo Bay, the Ministry of Education

³⁶ Undated, SCAP activities contributing to maximizing Japanese fish production. NARA RG 331, Box 8867.

announced it was establishing a new bureau of scientific education. "Science' soon became almost everyone's favorite concept for explaining both why the war was lost and where the future lay."³⁷

Since the Meiji Restoration, Japan had imported Western science and technology. "A scientist's first impression of Japan is of many technological developments copied from Western countries," wrote Harry C. Kelly, deputy chief of SCAP's Scientific and Technical Division in 1949.³⁸ The chief aim of many scientists, Kelly went on to say, was to expose themselves to Western scientific ideas that had developed during the isolation of the war. If the tattered Japanese economy was to be rebuilt, Western science and technology had important roles to play. A cadre of leading American scientists traveled to Japan, at the invitation of SCAP, to add their expertise to the recovery.

SCAP conducted an extensive inventory of the natural resources of Japan to get an idea of how they had been exploited before the war, the current status, and future production. All the major Japanese resources were inventoried, including crops, minerals, petroleum, and timber. The detailed surveys were reduced to a long series of charts, graphs, and statistics, all documenting the upward trajectory of increased harvests under SCAP's direction, and printed in red and black in the SCAP Monthly Summaries. The documentation was done despite frequently expressed concerns about the accuracy of the information.

³⁷ John W. Dower, *Embracing Defeat: Japan in the Wake of World War II* (New York: W.W. Norton & Co., 1999), 494.

³⁸ Harry C. Kelly, "A Survey of Japanese Science," *The Scientific Monthly* LXVIII (1949)., 42.

SCAP published a volume called *Japanese Natural Resources, A Comprehensive Study*, in 1949. According to the introduction:

Data from Japanese Government sources are subject to the same limitations as all other Japanese statistical information collected in the past. All data have been checked and reviewed by Allied specialists insofar as was possible, but for the most part they must be considered as subject to revision. Figures have been rounded in many instances, but the complexities of interrelations and conversions have made the rounding of data impracticable in many others; the number of significant figures presented is in no instances to be regarded as a criterion of reliability. Even though Japanese data, in general, are materially less reliable than data originating in the United States or some western European countries, it is felt that the statistics are sufficiently reliable to warrant the presentation of some general conclusions based on them.³⁹

The Natural Resource analysis critiqued government research programs because they were not founded on modern ecology. The soil science was outdated, handicapping all agricultural research and planning. Forest research did not show evidence of “the effects of the present coppice system and fire field cultivation.”⁴⁰ Fisheries research did not include population studies. The Japanese were years behind in applied physical sciences, compared to the US, Great Britain, Germany or Russia. The study recommended “a carefully planned and coordinated research program in the natural resources field.”⁴¹ Japanese scientists, engineers, and technicians were “inherently capable,” but they were

³⁹ Supreme Commander Allied Powers, *Japan's Natural Resources, A Comprehensive Survey* (Tokyo: Hosakawa Printing Company, 1949), xxi.

⁴⁰ Ibid. 504.

⁴¹ Ibid. 518.

handicapped by not knowing enough of recent scientific and technical developments. Japan should solicit the best available foreign scientific engineers it could find, and should continue to send its students abroad for training.

SCAP documents continually disparaged Japanese science in comparison with American science, part of an ostensible campaign to improve Japanese self-sufficiency by transferring American values and processes. The new, democratic Japan was expected to be the economic center of Asia, a bulwark against Chinese and Soviet communism. "Japanese culture was interesting and strong, but it was also viewed as malleable," wrote historian Walter LaFeber. "It could be put into the service of the American worldview. Japan was less an end in itself than the means, in Washington's eyes, for achieving the larger regional and global purposes of U.S. foreign policy."⁴²

Col. Hubert G. Schenck, chief of the Natural Resources Section of SCAP, wrote that since Japan would never be self-sufficient in terms of food, American scientists were needed to help with land reclamation projects, soil classification, control of insect and plant diseases, and development of grains with improved yields. There was an extensive network of 666 national and prefectural agricultural experiment stations and private laboratories, (almost as extensive as the fishery experimental stations and laboratories) but they lacked central guidance and coordination. Programs were duplicated and much work was of little scientific or practical value. Japanese forests suffered from overharvest and

⁴² Walter LaFeber, *The Clash: U.S.-Japanese Relations Throughout History* (New York and London: W.W. Norton & Co., 1997), 271.

insufficient replanting. American foresters supervised the development of a five-year program to place timber production on a sustained yield basis, while mining engineers advised on a program to increase coal production.

As a result of the study of natural resources, it has become fairly clear that, while both Japanese science and Japanese technology are based on European and American foundations, the liaison between them has been poor. Again, economic planning has never been considered on a national scale. Indifference toward national economic planning is a luxury that Japan can ill afford, but Japanese science and technology have never been in a position to attack the problem on a practical basis.⁴³

Japanese science would be reformed in a thoroughly Progressive way, with an emphasis on planning and efficiency, based on the use of statistics. Informed experts would make policy recommendations, based on science.

6.5 SCAP and American Fisheries Science

“SCAP was not so much “supreme” as a major player on a national chessboard, sometimes the queen, but more often merely a pawn,” wrote political scientist Chalmers Johnson in his study of post-war Japanese industrial policy.⁴⁴ This was certainly true of the tangled relationship between the Occupation and the powerful Japanese fishing industry. One of SCAP’s priorities was to rebuild the food supply, and that meant rebuilding Japanese fishing capacity. Priorities to shift scarce materials and petroleum to the industry resulted

⁴³ Hubert G. Schenck, “Natural Resource Problems in Japan.” *Science*. Oct. 8, 1948, Vol. 108. 367-372. 371.

⁴⁴ Chalmers Johnson. *MITI and the Japanese Miracle: The Growth of Industrial Policy, 1925-1975* (Stanford: Stanford University Press, 1982), 177.

in it exceeding pre-war capacity by early 1947. Rebuilding the industry so quickly and restoring a vital piece of the food supply was one of the SCAP's successes, but the powerful industry was extremely difficult for SCAP to control.

In some ways, Japan had been far ahead of the west when it came to fisheries science. Starting around 1900, Japan had transformed its fishing industry, imported the best of Western science and technology, such as trawl techniques from Britain and engines from Germany. The Imperial Fisheries School, outside of Tokyo, was considered the most advanced in the world, with a curriculum that covered the range of fishing activities, from marine biology to navigation, fishing and processing technology.⁴⁵ It operated training cruises for students, where experimental gear and technologies were tested, and information gathered about the potential for new fisheries. It had been the model when the University of Washington decided to create a School of Fisheries. The Game, Fish, and Oyster Commission of Texas wrote to SCAP in 1950, asking for any documents that could be found about a Japanese survey of the Gulf of Mexico, made during 1936. "If you can unearth this material, it would probably advance our work in the Gulf very rapidly," wrote the Commission.⁴⁶ Japan had not only had the world's most successful fisheries, it had the most extensive research program on marine biology and oceanography.⁴⁷

⁴⁵ F.A. Nicholson, *Note on Fisheries in Japan* (Madras: The Superintendent, Government Press, 1907).

⁴⁶ Texas Game, Fish, and Oyster Commission, Nov. 7, 1950, NARA RG 331, Box 8871, Folder, Correspondence-General.

⁴⁷ Ada Epensshade, "A Program for Japanese Fisheries," *Geographical Review* 39 (1), 1949, 81.

A 1947 SCAP analysis of the fishery research organization found 112 government-supported fisheries and marine products research stations and branch stations. Of the 47 prefectures, 43 had research and experimental stations doing biological and technological research in fisheries. A dozen marine biological stations were associated with universities and others were operated privately.⁴⁸ SCAP also found that Korea had a central governmental fisheries institution at Fusan, with two branch stations and eleven provincial branches. Formosa had a central government station with one branch and four provincial stations. Karafuto and Palau each had a biological station, with three stations in Manchuria and at Dairen in Kwantung. And the Japanese wanted to establish more stations!⁴⁹

An initial SCAP priority was to find and translate Japanese fishery materials for the U.S. and the other allies, and a steady stream of translated fishery and oceanography information soon appeared in American government journals such as the *Commercial Fisheries Review*. Australians were also interested in Japanese technology in general and fisheries in particular. Within a few weeks of the surrender, an advance team of Australians arrived in Tokyo, to look for industrial processes that might be helpful to the Australian economy.⁵⁰ When the first Antarctic whaling expedition left in 1947, there were Australian and American observers onboard.

⁴⁸ Supreme Commander for the Allied Powers, "Summation of Non-Military Activities in Japan and Korea, No. 4," (Tokyo: Supreme Commander for the Allied Powers, 1945), January, 1946. 81.

⁴⁹ Supreme Commander for the Allied Powers, "Summation of Non-Military Activities in Japan and Korea, No. 5, February, 1946. 76.

Yet the Americans systematically belittled Japanese fisheries science, for reasons that are not entirely clear. SCAP's initial fisheries policy, laid out on Feb. 18, 1946, included the goal of "ensuring the maximum production of seafood products consistent with security requirements."⁵¹ The goal was essentially the same as Secretary of the Interior Harold Ickes had ordered for American fisheries production during the war, maximum harvest in the name of societal good. Thanks to SCAP's preferential policies, the industry was rebuilt with incredible speed, exceeding pre-war capacity by early in 1947. But all fishing was confined to a small zone around Japan, and catches soon began to decline, especially in the East China Sea. By 1948, SCAP was estimating that there were at least 30 percent more vessels than needed to harvest the stocks available in the area. The fisheries zone had to be expanded, and quickly, or stocks would be at risk in other areas. There was enormous pressure on SCAP to expand the zone, but there was resistance not only from the neighbors of the Soviet Union, Communist China, and Korea, but also within the U.S.

SCAP had to show that the Japanese fishing industry had rehabilitated itself from its pre-war ways, and embraced modern Western conservation standards. In particular, Japan had to accept American fishery conservation goals, loosely embodied as taking no more fish than stocks could withstand. The American policy was formalized in January of 1949, during the middle of the

⁵⁰Bowen C. Dees, *The Allied Occupation and Japan's Economic Miracle: Building the Foundations of Japanese Science and Technology, 1945-1952* (Mitcham, Surrey: Japan Library, Durzon Press Ltd., 1997), 29.

⁵¹ *Commercial Fisheries Review*, April 1946, 42-43.

Occupation and at the height of tensions over fishing, as Maximum Sustained Yield (MSY) was adopted as the goal of American fisheries management, a subject that will be discussed in Chapter Eight.

SCAP systematically disparaged Japanese fisheries science, saying it was only interested in exploiting fish populations, not in developing fisheries so that stocks could be conserved, as the Americans were doing. The disparagement was built on the argument that Secretary of State Cordell Hull had made in 1936, as the U.S. protested the Japanese scientific investigation in Bristol Bay. Hull had structured his argument around the premise that the U.S. acted for conservation reasons, and the Japanese did not. It was an essentially political construction, but during the Occupation, it was applied to Japanese science. Western science was morally superior to Japanese science. The Japanese had to be seen as conceding that they had sinned in the past, but were now embracing international and national fishing restrictions. They would obey the regulations of the newly organized International Whaling Commission. And their fishermen would respect national regulations if the Japanese were allowed to fish in the waters of other countries. The man in charge of conveying all this, both to the Japanese industry, but also to the American industry and its politically powerful friends, was William C. Herrington.

6.6 William Herrington in Japan

The fisheries sector of SCAP's Natural Resource Section was initially headed by Major John F. Janssen Jr. His background is unknown, but in a memo written on Dec. 30, 1946, intended for the new chief of the fisheries section, Janssen warned that it might be dangerous to allow too many boats to be built to fish in such limited waters.⁵² Herrington arrived in February of 1947.

Herrington (1903-1991), who had tutored W.F. Thompson in calculus, had graduated from Stanford University in 1927 with a degree in zoology. During his early career he worked for the California Fish and Game Commission, the International Fisheries Commission, and the U.S. Bureau of Fisheries, later the U.S. Fish and Wildlife Service.⁵³ He had extensive experience with American fisheries, having worked in California, and in New England. Before moving to Japan, Herrington had completed a major study of the impact of imported fish fillets in New England. Fish imports from countries with lower standards of living and subsidized boats had the capacity to "completely demoralize the North Atlantic fishing industry and drastically affect the fishing industry in other sections of the country," Herrington wrote.⁵⁴ If any biologist had the background to appreciate the impact that Japanese fishing would have on the American industry, it was certainly Herrington.

⁵² Memorandum, from Major John F. Janssen Jr., Dec. 30, 1946. NARA, RG 331, Box 8866.

⁵³ Amy Toro, "Transformation in Fisheries Management: A Study of William C. Herrington," in *Oceanographic History : The Pacific and Beyond*, ed. Keith F. Benson and Philip Rehbock (Seattle: University of Washington Press, 2002). 423.

⁵⁴ William C. Herrington, "Imported Fish: A Major New England Problem." *Commercial Fisheries Review*, February, 1946, 1-12, 3.

One of his most important functions was to oversee the restructuring of Japanese fisheries research, which was considered unsatisfactory. Since it was accepted by the Americans that Japan would always be dependent on food from the sea, it was necessary that Japanese fisheries science be imbued with the spirit of conservation, just as American fisheries science was. The Diet was about to establish a Japanese Fisheries Board with an eye to making research more efficient and coordinated.⁵⁵ SCAP, in its usual thorough fashion, had compiled a list of what fisheries research was being done throughout Japan, and how many articles were being published. It also had a list of fisheries professors that it considered competent.

Despite the enormous resources the Japanese had devoted to fisheries research, SCAP warned that just looking at the scale of the effort was misleading. Much of the research was focused on locating fish for commercial fishermen, training students in how to fish, and testing gear. There was much duplication and many scientists were not familiar with the work of others or with the work of foreign scientists. "However, the chief difficulty seems to be that the modern ideas of fisheries conservation and management are not understood or accepted by the Japanese research workers or administrators."⁵⁶ Western science was a proxy for Western democracy. "Japanese scientists are not

⁵⁵ "Recommendations Submitted by the Aquatic Research Reform Committee to the Minister of Morinsho," June 18, 1948. NARA, RG 331, Box 8867.

⁵⁶ "Fisheries Survey, Fisheries of Japan." Oct. 18, 1948. NARA RG 331, Box 8867.

accustomed to the free exchange of ideas Western scientists take for granted, wrote a SCAP researcher, adding that modern fisheries research was “unlike the old research problems with which they are familiar.”⁵⁷

As a partial remedy, SCAP initiated a program of sending Japanese scientists to the U.S., to show Japan how to adopt “more enlightened fisheries conservation policies.”⁵⁸ A subsequent memo warned that the great number of projects, scientists, and research facilities “should not be allowed to give the impression that this country is extremely advanced in fisheries research and education.”⁵⁹ Accurate research, applied in a “modern, scientific manner has not yet become part of the Japanese way of thinking.”

Col. Schenck, in an analysis written for *Science*, conceded that Japan had done more research on fishing methods and development than any other country in the world, but the result had been overfishing of some stocks. It was time for Japan to shift its emphasis from exploiting fish populations to long-term management directed at establishing sustained yields. A committee of scientists and industry representatives was created to make recommendations for the reorganization of the Bureau of Fisheries, and to have it elevated in status. The

⁵⁷ Ada Epenshade, “A Program for Japanese Fisheries,” *Geographical Review* 39 (1), 1949, 82.

⁵⁸ “Itinerary and Purpose of Proposed Trip to United States by Dr. Motosaku Fujinaga and Mr. Atsuyoshi Hosokawa.” Oct. 20, 1948. NARA RG 331, Box 8867.

⁵⁹ “FAO Questionnaire on Fisheries Research and Education.” Nov. 23, 1948. NARA RG 331, Box 8867.

Diet on July 1, 1948, gave the Bureau the status of a Fisheries Agency, with broad powers to conduct planned research projects and to disseminate results to the fishing communities.⁶⁰

Herrington was certainly aware of the impact that a rebuilt Japanese fleet could have on the neighbors, as well as the U.S. Under the Potsdam Declaration, Japan was to be allowed access to raw materials it had utilized before the war, when Japan had been the world's leading fishing nation, a position that was supported by the State Department. Herrington undoubtedly saw part of his mission to protect American fisheries as best he could from future competition from the Japanese. There was unease within the U.S. Fish and Wildlife Service about the impact of SCAP's rebuilding program. In an Oct. 13, 1948 letter, A.W. Anderson, chief of the agency's Branch of Commercial Fisheries, asked Herrington if "all the things SCAP wants to accomplish would be accomplished by wiping out the U.S. fishing industry, we should proceed at once to that goal? Suppose, for example, that permitting the Japanese to fish unrestrictedly and to export without limit to us would solve the problem but at the expense of reducing our fisheries to impotency."⁶¹ If Herrington replied, the letter was not in the correspondence file.

If the science could be remade in the American model, with a focus on "conservation," perhaps the Japanese would restrain their fisheries in the future.

⁶⁰ Hubert G. Schenck, "Natural Resource Problems in Japan." *Science*. Oct. 8, 1948, Vol. 108. 367-372. 369.

⁶¹ Anderson to Herrington, July 22, 1948, Papers of William C. Herrington, University of California Berkeley School of Law, Carton 2D.

It is likely that Herrington truly believed that American fisheries science was grounded in conservation of the resources, despite his involvement in the collapse of sardines while he was working for the U.S. Fish and Wildlife Service in California, and his experiences in New England fishery declines. And, like other SCAP officials, Herrington was caught up in increasing the food supply for the Japanese people. But harnessing the powerful Japanese fishing industry would be no easier than it had been to harness the floating canneries in California in the 1930s, when they moved offshore to evade fishing regulations established by the State.

6.7 Expanding the MacArthur Zone

It was obvious to SCAP that expanding the MacArthur Zone was a necessary first step to expanding the fish catch. SCAP's objectives were to catch as much fish as possible, reducing the cost of food paid for by American taxpayers. But, as always, there were other objectives, such as pushing back against the Soviet claim to the Kurile Islands.⁶²

By the spring of 1947, SCAP was estimating that the fleet had recovered to approximately the pre-war level of 1939. There was pressure from the Japanese industry to expand the Zone; it was the only way to increase the catch for 1948.⁶³ The industry wanted to expand into the East China Sea and the southern part of the Yellow Sea.⁶⁴ But the Korean government was asking SCAP to reduce the fisheries zone, pushing it closer to Japan.⁶⁵

⁶² Draft Staff Study, SCAP. NARA RG 331, Box 8866.

Fishing was so deeply integrated into the economic life of Japan that the industry rebounded with enormous speed. Most of the coastal villages had a fishing fleet of some size, with the village hierarchy controlling access and fishing periods. The system of fish distribution had begun in 1644, when the Shogun first organized fish markets into a guild system for organized fish distribution throughout the country.⁶⁶

What SCAP overlooked in its zeal to rebuild fishing capacity was that the pre-war Japanese fleet had been far too large for local fish resources to support. Since the introduction of trawl technology from the West in the early 1900s, Japan had dealt with its excess capacity by moving boats into waters farther and farther from Japan. The pattern that E. S. Russell, Michael Graham, and W.F. Thompson had detected—that fishermen had to fish more and more water to maintain the catch level--had also been true of Japanese fisheries. Under SCAP, the fishing fleet had been rapidly restored, but there were too many boats fishing too little water and catches were falling. Since there was virtually no maritime enforcement, Japanese boats frequently violated the zone, drawing a constant stream of complaints. By the end of 1948, SCAP had compiled a long list of

⁶³ Memo from W.C. Neville, Deputy Chief, Fisheries Division. NARA RG 331, Box 8866

⁶⁴ Petition from Taiyo Fishing Co. March 25, 1947. NARA RG 331, Box 8866

⁶⁵ "Voices of Korean Fishing World." July 24, 1947. NARA RG 331, Box 8867.

⁶⁶ Theodore C. Bestor, *Tsukiji: The Fish Market at the Center of the World* (Berkeley: University of California Press, 2004). 106.

seventy-eight reports about various Japanese fishing violations outside the authorized area. The Japanese government was proposing to provide eleven vessels for fisheries patrol, but the proposal had not yet been funded.⁶⁷

The fishing industry pressed for permission to expand the Zone, but SCAP desperately wanted to expand it as well. It was a matter of policy, to fulfill the Potsdam Declaration provision that Japan be allowed access, without restrictions, to the resources it had utilized before the war. Expanding the Zone would increase the catch, contributing to the success of SCAP's mission. If the Zone was expanded into the Trust Territories, sending Japan back into the canned tuna business, the fish could be sent to the U.S, reducing the ever-escalating costs of the Occupation.⁶⁸ And if there was ever going to be a peace treaty with the U.S., the fishery issue would have to be solved. The collision between Japanese and American fisheries, which had started during the 1930s, was rapidly building pressure. SCAP, with its internationalist allies in the State Department, was on a collision course with the American fishing industry, and its Congressional representatives.

General MacArthur had no patience with the argument that Japanese fishing should be restricted because it might hurt the American fishing industry. It would be immoral and unjustified for the U.S. to repudiate its "international commitment that Japan would be given access to raw materials to support her internal economy," MacArthur wrote to the State Department on Oct. 3, 1948.

⁶⁷ "Summary of Developments and Actions Regarding Violations of SCAPIN 1033." Oct. 27, 1948. NARA RG 331, Box 8866.

⁶⁸ "Japanese Fishing Policy and Cable C-61147, June 2, 1948. NARA RG 331, Box 8866.

“Repudiation of these commitments for the fallacious reasoning given would materially weaken our moral leadership among the nations of the world.

Adherence to them on the other hand would conform to traditional American policy and afford the means of advancing our positive influence in the broad field of international morality.”⁶⁹

SCAP’s Diplomatic Section was also interested in using fisheries to advance its foreign policy objectives, especially towards the Soviet Union, which had claimed a twelve-mile territorial limit that the U.S. was refusing to recognize. The Diplomatic Section wanted to expand Japanese fishing in the area north and northeast of Hokkaido, now controlled by the Soviets. The current restrictions denied local Japanese fishermen access to the waters where they had made their living. U.S. policy was that high seas fisheries should be managed for maximum food production and that all nations had the right to engage in high seas fishing if they obeyed conservation regulations.

“There is a strong possibility that the USSR will attempt to use the present fishing boundary in the north as a basis for a permanent political boundary...it is highly desirable at this time that it be made a matter of record that SCAP does not consider this northern fishing boundary a fixed and permanent line.”⁷⁰ The Diplomatic Section conceded there were numerous violations, which could be reduced if the zone was expanded towards the Philippines and China.⁷¹

⁶⁹ SCAP to Department of Army, Oct. 3, 1948. NARA RG 331, Box 8866.

⁷⁰ Memorandum, April 2, 1949. NARA RG 331, Box 8866.

⁷¹ Memorandum, April 30, 1949. NARA RG 331, Box 8866.

But if SCAP was to expand the fisheries zone, it first had to prove that the Japanese were obeying the regulations imposed by the Occupation. Herrington had to persuade the industry to obey the territorial restrictions, at least long enough for SCAP to expand the MacArthur Zone. He frequently scolded the industry, warning that its pre-War reputation was poor. Japan had disregarded the League of Nations recommendations not to kill pregnant females and calves. They had abrogated the Fur Seal Treaty in 1941 and disregarded conservation measures established by other countries. Fishing violations destroyed the “international good will which the Supreme Commander is helping the Japanese fishermen to develop.”⁷² It was up to the industry to come up with a plan to obey the fishing regulations, so that fishing territory could be expanded.

6.8 Japanese-American Relations

By 1948, relations between for Japanese and the U.S. were especially tense. There was no end in sight of the Occupation and the costs were accelerating rapidly. The initial U.S. policy towards Japan called for dismantling the military and installing democracy. Agricultural land was redistributed and large-scale monopolies, seen as contributing to the war effort, were to be dismantled.

With the collapse of the Chinese nationalists, the Americans wanted an Asian country to showcase their model of economic development, “large-scale, specialized production for the world market that would reap the higher profits of

⁷² Memo from Herrington. Jan. 12, 1948. NARA RG 331, Box 8866.

comparative advantage and economies of scale.”⁷³ By 1948, the Americans were growing increasingly impatient with the pace of social and economic reforms in Japan. They decided that reindustrialization should be speeded up and began what is called the “reverse course,” which called for the abandonment of many of the social goals.

Occupation costs increased to \$392 million in 1948, and were projected to increase to \$429 million in 1949, with an additional \$102 million from EROA funds.⁷⁴ By late 1949 and early 1950, Japan’s trade deficit with the U.S. increased sharply, the yen fell, and some observers thought Japan was close to economic collapse. There were strong economic pressures to create products that could be shipped into the American market. One of the most promising products was something Americans appeared to have an unlimited appetite for, canned tuna. But first the MacArthur Zone would have to be expanded again, something the Russians, Chinese, Koreans, Philippines, and Australians all opposed. There was opposition within the U.S. as well, from the Southern California tuna industry and the Seattle and Alaska canning industry..

In December of 1947, shortly before Herrington arrived in Tokyo, SCAP had opened a foreign trade office in New York, to make it easier to sell more Japanese commodities.⁷⁵ By the end of 1948, small amounts of Japanese canned albacore had reached the New York market, drawing protests from the

⁷³ Thomas J. McCormick, *America's Half-Century: United States Foreign Policy in the Cold War and after, 2nd Edition* (Baltimore: John Hopkins University Press, 1995). 89.

⁷⁴ Shigeru Yoshida. *The Yoshida Memoirs: The Story of Japan in Crisis*. Translated by Kenichi Yoshida. (Boston: Houghton Mifflin, 1962). 38.

⁷⁵ *Commercial Fisheries Review*, December, 1947.

West Coast tuna industry. Large tuna schools, observed the *Pan-American Fisherman*, “provide the Japanese with plenty of ammunition with which to gun down American prices.”⁷⁶ The industry was opposed to free trade and the reduction of the current duty on tuna, now 22.5 percent, but its leaders knew it was only a matter of time before the Japanese would again be dominating their market.⁷⁷

6.9 Controlling the Japanese Fleet

SCAP went on the offensive in dealing with the Japanese overcapacity problem in early 1949. There were two fronts: bringing American fisheries experts to Japan to explain SCAP’s objectives, and trying to rein in the illegal fishing. Herrington held a press conference on Feb. 5, 1949, where he told the industry that their present restrictions on fishing were due to their behavior before the war—the now familiar litany of violations. Bristol Bay was not forgotten. “Japanese boats also conducted clandestine salmon fishing in the Bering Sea, which endangered Alaska salmon runs that had been restored and maintained by the United States government through extensive research and regulation.”⁷⁸

Herrington and other fishery officials during this period continually cited American fisheries as examples of modern scientific fisheries management, grounded in conservation of the stocks. After three decades of warnings, the Bristol Bay sockeye runs had collapsed so thoroughly that in 1945, the canning

⁷⁶ *Pan-American Fisherman*, December, 1948. 11-12.

⁷⁷ *Pacific Fisherman*, January, 1949. 47.

⁷⁸ Press Conference Statement. Feb. 5, 1949. NARA RG 331 Box 8866.

industry approached William F. Thompson to draw up a research plan to place the fishery on sound management.⁷⁹ California sardine catches, pushed to the maximum by the requirements for protein during the war, had all but collapsed, leaving more than 200 purse seine boats no choice but to enter the rapidly developing tuna fishery. Nevertheless, it was an article of faith for Americans that they were “conserving” their fish stocks and their fisheries management was the best in the world.

SCAP was pushing the Japanese government to institute a patrol system to control illegal fishing, but the government was reluctant to allocate the funds. “The people of other countries can have no confidence that you will observe any other limitations on your operation if you do not now observe present regulations,” Herrington scolded at the West Japan Trawlers Association meeting on Feb. 11, 1949. “Furthermore, no country wishes to have Japanese fishermen operating along their shores, exhausting their resources, as Japanese trawlers are now destroying the fishery resources of the East China Sea.”⁸⁰ But Herrington acknowledged neither SCAP nor the government had any practical means for controlling Japanese fishing at sea.⁸¹ In a June 16, 1949, meeting with government fishery officials, Col. Schenck was blunt:

I have heard so far only promises, only words. I have yet to see you take direct action to comply with the requirements that have been given to you to enforce the fishing areas. We know that there have

⁷⁹ Robert R. Stickney, *Flagship: A History of the Fisheries at the University of Washington* (Dubuque, Iowa: Kendall/Hunt Publishing Company, 1989), 45.

⁸⁰ Statement to the West Japan Trawlers Association. Feb. 11, 1949. NARA RG 331, Box 8866.

⁸¹ Papers of William C. Herrington, University of California, Berkeley, School of Law, Carton 3D.

been more violations than the ones that you have mentioned today. The Japanese government has taken absolutely no action to prevent violations.⁸²

By the summer of 1949, SCAP was proposing two experimental mothership ventures to the Trust Territories for tuna. There would be SCAP personnel on board and scientific research would be coordinated with the Pacific Oceanic Fisheries Investigations out of Hawaii.⁸³ From Washington, D.C., Wib Chapman also advised expanding the territorial waters to the north as quickly as possible. "The Russians have been putting up the toughest kind of time in the Baltic trying to enforce a twelve-mile limit—confiscating ships right and left. On this move you can expect strong backing. Let me know before you pull the trigger."⁸⁴ Even the U.S. industry was resigned to the Japanese returning to the Trust Islands, Chapman wrote, although it was a significant trade off in the proposals for a peace treaty: the Japanese could fish tuna in the Trust Territories, but not salmon off Alaska.

On Sept. 19, 1949, SCAP again urged that the Japanese fishing areas be expanded to include the high seas areas of the Trust Territories, where the Japanese had caught so much tuna before the war. SCAP established a fishery inspection patrol, and the first expedition was a mothership operation, under strict supervision.⁸⁵ The former Japanese fishing area had been at 165 degrees

⁸² SCAP memorandum, June 16, 1949. NARA, RG 331, Box 8866.

⁸³ Herrington to Chapman, Aug. 22, 1949. Papers of William C. Herrington papers, University of California, Berkeley, School of Law. Carton 3D.

⁸⁴ Chapman to Herrington, Aug. 27, 1949. Papers of William C. Herrington papers, University of California, Berkeley, School of Law. Carton 3D.

⁸⁵ Japanese Fishery Advisory Committee Memorandum, Oct. 19, 1949. Files of the Columbia River Maritime Museum.

longitude; now it was open to 180 degrees longitude. The new regulations also allowed the Japanese to approach within three miles of territory occupied by other nations.⁸⁶ This was a challenge to the Soviets, since SCAP was proposing that Japanese fishing be expanded to the north, to within three miles of the Kurile Islands, now occupied by the Soviet Union.⁸⁷

Herrington told a meeting of Hokkaido businessmen on Nov. 16, 1949, that Japanese fish production was probably greater than it had been before the war. He estimated the fleet at 450,000 boats, with a trend towards larger boats with more at-sea capacity. The maximum production from inshore waters had been reached and in some cases exceeded. But despite the increased number of boats and fishermen, overall production had not increased. "The individual fisherman's share of the catch, therefore, has been reduced, while his expense of operation has become greater."⁸⁸ It was the pattern identified by E.S. Russell, Michael Graham, and W. F. Thompson, that as fishermen exhausted the waters near home, they had to travel further, at greater cost, to keep production levels high. But under the Occupation regime, Japanese fishermen could no longer seek refuge from their overcapacity problems in distant water fisheries.

⁸⁶ *Pacific Fisherman*, November, 1949. 53.

⁸⁷ Herrington to Chapman, Aug. 22, 1949. Papers of William Herrington, University of California, Berkeley, School of Law. Carton 3C.

⁸⁸ "Substance of informal remarks to the Hokkaido Businessmen's Association." Nov. 16, 1949. NARA, RG 331, Box 8867.

6.10 The Visiting American Experts

In an effort to sell SCAP's achievements to the U.S. fishing industry, SCAP brought two sets of American fisheries representatives and scientists to Japan. The first group consisted of three industry representatives, sent in 1949 as part of a campaign to win American industry support for the expansion of Japanese fishing territory. The second, during 1950, was composed of scientists who provided a critique of Japanese fisheries science and management.

The visiting scientists included Dr. Willis H. Rich of Stanford University, Dr. Richard Van Cleve, director of the School of Fisheries at the University of Washington, and Richard S. Croker of the California Department of Fish and Game. Croker's analysis of the coastal fisheries, including the deepwater trawl sector, was blunt. The fishery was in "a chaotic condition featured by too many fishermen, overfishing, contradictory and ambiguous laws and regulations, widespread law evasion, and inadequate law enforcement, accompanied by a general lack of appreciation for the serious nature of the situation."⁸⁹ The fault was attributed to the Japanese, not to the policies that SCAP had been implementing for the previous five years.

In written reports and statements at Tokyo news conferences, the three emphasized that Japanese fisheries science must be reoriented from exploiting fishery resources to conservation. At the same time, they reiterated the example of American fisheries science, with its goal of conservation so that MSY could be

⁸⁹ SCAP Natural Resources Section, Richard Croker, "Japanese Fisheries Administration." NARA RG 331, Box 8872. Folder 23.

attained. "The average American fisherman has learned the importance of fisheries conservation; he realizes that "conservation is wise use" and that without conservation his own future is jeopardized," Rich claimed.⁹⁰ He urged the Japanese to take an interest in conservation of fishery resources outside Japan. Rich went on to laud SCAP for its emphasis on biological studies to prevent overfishing, despite the fact that by 1950, under SCAP policies, Japanese fisheries had been restored to greater capacity than in 1939, and the excess boats were threatening local resources, especially in the East China Sea. SCAP was involved in a race, to have the MacArthur Zone expanded and the tuna fishery re-established before local Japanese stocks collapsed completely.

On Aug. 30, 1950, the Minister of Agriculture and Forestry signed an ordinance reorganizing its Bureau of Statistics. The new organization provided for census and economic surveys of the fishing industry, and the creation of a fishery statistics section that would collect and compile all the fisheries production statistics, using the method of stratified sampling. The method was to collect catch data from selected fishermen, showing their catch per hour or day, and the number of hours or days fished. An average catch per unit of time is calculated, and number of units recorded, allowing the calculation of the total

⁹⁰ A Press Conference Statement, Dec. 1, 1950, Dr. Willis H. Rich. NARA RG 331, Box 8872, Folder 23.

catch. The Bureau of Statistics called for hiring 1,000 full-time agents and office people and 7,000 part-time employees. "These people will not work on anything except fisheries statistics," according to a SCAP memo.⁹¹

A Fisheries Resources Investigation Advisory Committee was also created, to investigate the current fisheries and whether or not there was overfishing. SCAP's Biological Research Section prepared a list of ten approved Japanese scientists, who might be involved in the committee.⁹² SCAP was also pushing the Ministry to take steps to halt an increase in the Japanese fishing fleet, by refusing to approve the construction of new vessels.⁹³ Herrington was certainly aware that SCAP's liberal policies towards the fishing industry had increased the food supply in the short-term, but created a series of long-term problems, not only for the Japanese fishing industry, but for the American industry as well.

His dilemma is on display in two reports he wrote for SCAP files in late August of 1950. In one, Herrington detailed the outstanding fishery accomplishments in Japan during the previous year, which saw fisheries restored to a level they had not seen since 1940. So much fish was being caught that price controls were removed, resulting in a drop in prices. Herrington reported that considerable progress had been made in reorganizing the Japanese

⁹¹ J.A. Craig to William Herrington, Oct. 28, 1950, "Collection of Fisheries Statistics by Ministry of Agriculture and Forestry." NARA RG 331, Box 8890, Folder, "Laws and Legal Matters." Memorandum.

⁹² Memorandum, "Re: Establishment of Fisheries Resources Investigation Advisory Committee." Oct. 28, 1950. NARA RG 331, Box 8890, Folder, "Laws and Legal Matters." Biological Research Section, Fisheries Agency.

⁹³ "Replacement Plan of Fishing Vessels." NARA RG 331, Box 8869.

Fisheries Research system to place greater emphasis on population studies to determine how to prevent over-exploitation and develop the maximum sustained yield. The Diet had passed a law for the Prevention of Exhaustion of Marine Resources giving the Ministry of Agriculture the power to regulate the number of fishing vessels. The two mothership operations for tuna had been organized. Fisheries Associations had been dissolved and cooperatives organized, with 780,000 members engaged in purchasing materials and marketing fish.⁹⁴

Yet Herrington took a much different view in a memorandum for the fisheries file, written a few days earlier. On the subject of fisheries statistics, Herrington said that Japanese statistics continued to be “notoriously poor and unreliable.” Progress after three and half-years was “negligible. Fisheries Agency unwilling or unable to make improvements.” The collection system was “inadequate, inefficient, inaccurate, expensive.” The data were incomplete and efforts were duplicated. Herrington’s overall conclusions were that the program was both ridiculous and extravagant, and the U.S. could be of no further help and would suspend further efforts.⁹⁵

The two reports were written at the same time. The first represented a list of SCAP’s accomplishments, glossing over the problems that were revealed in the second, which was obviously written in frustration. The latter must be considered to reflect Herrington’s real opinions (or at least real frustrations), or

⁹⁴ “Some Outstanding Fishery Developments in Japan During the Twelve Months Ending 31 August 1950,” by William C. Herrington. NARA, RG 331, Box 8871, Folder “Correspondence, General.”

⁹⁵ “Memorandum for Fisheries File, Aug. 29, 1950. NARA RG 331, Box 8870, Folder, “Laws and Legal Matters.

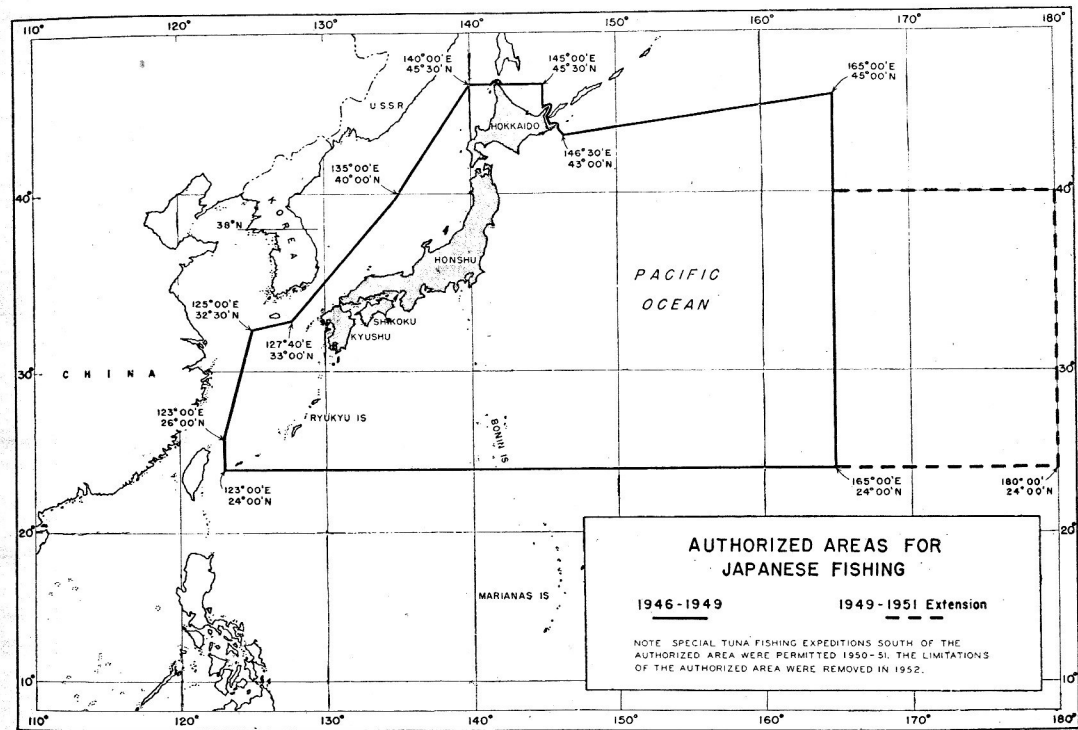
why else would he have bothered to write it? The report can be read as an admission that SCAP, and Herrington, had been unable to substantively change anything about Japanese fisheries science and management, despite the five years of effort during the Occupation. The elaborate collection system, which was to give the fisheries scientists the data to set up an American-style management program, had been firmly resisted by the Japanese. They had accepted Herrington's scolding and criticism, because they had no choice, but they had not substantively changed the way they operated. As Herrington prepared to return to the U.S., it must have been with deep misgivings about the future, both for the Japanese fish stocks that were being pressed so hard within the MacArthur Zone, and for the American fishing industry, as the Japanese fleet continued to rebound.

SCAP's initial goal and policies had been to restore the fishing industry so it could once again perform its vital role in feeding the people of Japan. But fisheries was soon attached to other goals, responding to the Soviet Union's claims of a twelve-mile territorial sea, and finding exports for the American market to reduce the costs of the Occupation itself. The tensions of the 1930s had been re-created. The Soviet Union, China, Korea, and the Philippines, as well as Australia and New Zealand, watched apprehensively as the Japanese fishing fleet was swiftly rebuilt to pre-war capacity. Most uneasy of all were the Seattle and Alaskan salmon industries, who had been unable to persuade the U.S. government to create a conservation zone to protect their most valuable

fishery. Ultimately, despite all the American rhetoric about the conservation of stocks, SCAP's focus on restoring the Japanese fleet had been at the expense of the local fish stocks.

It was the familiar pattern that had been identified in the North Sea and in the Pacific halibut fishery. "Fisheries that are unlimited become unprofitable," Graham had written in 1943.⁹⁶ Despite all of SCAP's efforts—or because of them—Japanese fisheries were on the verge of a steep decline, a decline that could only be arrested by the solution the Japanese government had chosen during the 1930s, expanding into the waters of other nations. The Japanese had been free to act in the 1930s, in spite of protests from Australia, Russia, and the U.S. This time it would be much more difficult.

⁹⁶Michael Graham, *The Fish Gate* (London: Faber and Faber Limited, 1943), 155.



Natural Resources Section GHQ, SCAP, Tokyo

FIGURE 30

Illustration 5, Pre-war Japanese Fisheries. (Natural Resource Section, Supreme Commander Allied Powers).

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Chapter Seven

Increasing Worldwide Capacity

“In the last half of the 19th Century the American economy was largely based upon the development of the Great Plains. The Pacific Ocean is the Great Plains of the last half of the 20th Century.”

Wilbert Chapman¹

Hunger was an enormous problem during and immediately after the war. The Bengal famine in India had begun in 1943, the same year Mexico was rocked by food shortages that threatened to develop into famine. The Southeast Asian economy had been severely disrupted by the Japanese occupation. An estimated one million people died of starvation in Viet Nam in 1945. Many Chinese cities, as well as Manila, had been destroyed by the American strategic bombing campaign.² Starvation and malnutrition were widespread in China after the retreating Japanese blew up key dikes on the Yellow River, flooding three million acres of fertile farmland.³ The food situation was especially dire in Japan, where food rationing had been imposed in 1942 and rice rations had been progressively cut as the war went on.⁴

¹ Wilbert Chapman, *Tuna Fisherman Magazine* 1, no. 2, January, 1948.

² H.P. Willmott, *The Second World War in the Far East* (Washington, D.C.: Smithsonian Books, 1999), 27.

³ Thomas G. Paterson, *On Every Front: The Making and Unmaking of the Cold War* (New York, London: W.W. Norton & Company, 1992), 11-12.

⁴ Shigeru Yoshida, *The Yoshida Memoirs: The Story of Japan in Crisis*, translated by Kenichi Yoshida (Boston: Houghton Mifflin Company, 1962), 204.

The winter of 1947 was one of the worst in history, slowing agricultural recovery across Europe and the Soviet Union.⁵ Ocean warfare had disrupted marine commerce, including the transport of food. In Great Britain and Germany, where there had been thriving fishing industries before the war, boats had been commandeered for the war effort. The fishing boats that remained had neither fuel nor cotton to make nets. Hunger was a serious crisis of global proportions. The memory of European famine after World War I loomed large in many minds.

Food shortages retain an “ancient power to capture people’s attention,” writes historian of technology John Perkins.⁶ This time, as policy makers reacted to the hunger crisis, they were armed with a new arsenal of responses, the scientific and technological advances that had helped to win the war. In addition to the humanitarian concerns, hunger was seen as an essentially political problem. Solving it could make governments more stable, lessening the political unrest that created social unrest and opportunities for Communists. Alleviating hunger could be a major step towards world peace. “Americans believed that economic instability and poverty bred political chaos, revolutionary behavior, totalitarianism, violence, aggression, and war,” wrote historian Thomas Paterson. “It was assumed that these conditions were attractive to political extremists like

⁵ John H. Perkins, *Geopolitics and the Green Revolution: Wheat, Genes, and the Cold War* (New York: Oxford University Press, 1997), 127.

⁶ *Ibid*, 125.

Communists, who always preyed on weaknesses and dislocations."⁷ Increasing the food supply would take away what was thought to be a fundamental cause of societal unrest, the problem of hunger.

The production of food, and trade policies that facilitated the transfer of food, became policy weapons for many nations after the war. The crisis in the world food supply helped to solidify the role of agriculture—especially technologically-rich agriculture-- in the national political economy of industrialized countries. This industrialization depended on scientific inputs, such as fertilizers and pesticides. "Farmers, agricultural scientists, the industrial economy that depended upon a productive agriculture for inputs and markets, and the power brokers in government and industry all came to be increasingly intertwined," wrote Perkins.⁸ This agricultural metaphor carried over into thinking about the sea, with the idea that waters could be fertilized to speed the growth of fish. Fishing, science, technology, and government policy would also be increasingly intertwined during the post-war years.

Beyond the immediate need for humanitarian relief, it was clear to President Franklin Roosevelt that some sort of agency was needed to coordinate food production and assist developing nations to increase their food supply. Representatives from twenty-three nations attended a meeting in Quebec City in 1945 and created the Food and Agricultural Organization of the United Nations

⁷Thomas G. Paterson, *On Every Front: The Making and Unmaking of the Cold War* (New York, London: W.W. Norton & Company, 1992), 71.

⁸ John H. Perkins, *Geopolitics and the Green Revolution: Wheat, Genes, and the Cold War* (New York: Oxford University Press, 1997), 101.

(FAO). Its mission was “to contribute to the expanding world economy by raising levels of nutrition and standards of living, improving the production and distribution of food and agricultural products, and bettering the conditions of the rural poor.”⁹ FAO was committed to increasing the world food supply, particularly fish from the ocean, which was viewed as a huge and virtually untapped resource, despite the precarious state of most of the major fisheries. FAO played a central role in the expansion of fishing in undeveloped areas by transferring Western technology, fishing practices, and fishing ideology. New engines, larger boats, and fishing gear were all transferred to other countries, in the name of increasing the harvest from the sea.

7.1 Rebuilding the Global Fishing Fleet.

The end of the war unleashed a free-for-all on the world’s fish stocks. An unprecedented amount of money was poured into commercial fishing. Developed nations with distant water fleets greatly expanded their range and share of the catch, while selling technology to smaller nations wanting to develop their own fisheries. Small-scale domestic fisheries also expanded their range and catch capability, as larger engines made it possible to fish in deeper water, farther from home. And as the world’s fishing fleets were rebuilt with staggering speed and far greater capacity than ever before, the technologies developed during the war were transferred to private industry.

⁹ A.A. Anderson, “The FAO Conference at Copenhagen.” *Commercial Fisheries Review*, November, 1946, 1-2.

This expansion was now given a moral justification: the humanitarian goal of increasing the world food supply. The war had disrupted agricultural production, causing widespread famine and millions of deaths. The untapped resources of the ocean, it was argued, could feed the hungry millions in the years to come. Fisheries scientists played a leading role in making this argument. In the process, fishing became tightly tied to post-war government policies.

The issuance of the Truman Proclamation on Sept. 28, 1945, marked the acceleration of fishing pressure on global stocks. There had always been heavy fishing on commercially-important stocks, but by the end of World War II, pressure on developed stocks grew, and there was a systematic search for new ones. The search was by much larger vessels, with much greater fishing capacity, and, for the first time, technology that allowed fishermen to peer into the dark world below them, to find and follow schools of fish.

Much of the fishery expansion was funded by governments. Fishing was seen as a logical place for economic expansion, increasing the local food supply, providing needed employment in coastal fishing areas, and a potential source of export revenue. Despite biological concerns about a long list of fish, from cod, plaice, and haddock in the North Sea, to salmon, halibut, and sardines on the West Coast of the United States, an unprecedented expansion of money into fishing was about to take place.

Many fisheries had been highly industrialized before the war, especially the distant water fleets of Japan, the U.S., Britain and Germany. Many domestic

fisheries were operated on an industrial scale as well, a scale that accelerated during the war, when conservation restrictions were eased to produce more food for the troops. The patriotic exhortation to produce the maximum catch to aid the war effort contributed to the already established idea that fish should be harvested to their maximum point. Rapid advances in technology not only dramatically increased the catch during this period, but advances in transportation opened new markets, as fish truly became global commodities.

After the war, this trend accelerated sharply. Political scientist Eugene B. Skolnikoff argues that the accelerated commitment of resources to research and development transformed a relatively haphazard process of knowledge formation into a formidable system “for targeting human ingenuity toward the rapid expansion of knowledge and production of new technologies designed to serve perceived or speculative needs.”¹⁰ This enormous capability was unleashed in the oceans. State and federal fishery agencies focused on development, expanding the catch and facilitating its transfer to market. Research and development was increasing applied to increasing the catch, making both fishing and processing more efficient, and finding new uses for what were called “underutilized species.” A key element was the influx of government support for science and technology, at first driven by security concerns.¹¹

There were three innovations that greatly increased the fishing power of the fleet. The first were the electronics developed during the war and soon

¹⁰ Eugene Skolnikoff, *The Elusive Transformation: Science, Technology, and the Evolution of International Politics* (Princeton: Princeton University Press, 1993), 4.

¹¹ *Ibid.*, 18.

transferred to the private sector, including radar and sonar. The second advance was continued improvements in refrigeration, which made the factory processing ships of the 1950s possible. The development of frozen foods offered a new way to make cheap fish products available to consumers. A third development was nylon nets, which proved stronger, cheaper, and often invisible in the water, offering a far more effective alternative than the cotton nets used before the war. The development of nylon nets greatly expanded purse seine techniques around the world, accelerating the catch of herrings, sardines, and anchovies.

The increased fishing brought increased territorial tensions, thrusting fishing issues to the forefront of policy discussions within the U.S. State Department. The powerful West Coast salmon industry continued to push for the creation of a conservation zone off Alaska that would permanently bar the Japanese from fishing on Bristol Bay salmon. The presence of Southern California bait boats was a constant irritant to Latin American countries, and with the collapse of the sardine fishery, purse seine vessels soon joined the bait boats in the waters off Mexico, Peru, Costa Rica, and Ecuador. In Japan, where SCAP was rapidly rebuilding the Japanese fishing fleet to exceed its pre-war strength, there were constant violations of the restrictive MacArthur Zone, drawing complaints from Russia, China, Korea, the Philippines, and Australia. The solution to keeping fish catches high was to expand into new waters, but new waters, and new stocks of fish, were becoming more difficult to find.

7.2 The Global Expansion

Many governments substantially increased their investment in fisheries after the war. England, France, and Norway expanded distant-water fishing, increasing their efforts to fish off Iceland, Greenland, and Newfoundland. France invested \$5 million in processing, cold storage, and docks in the island of St. Pierre, its possession off Newfoundland. The French port became the staging ground for European boats fishing for Atlantic cod. In April of 1949, the British launched the research vessel *Ernest Holt*, designed to carry out fisheries research in the Arctic.¹² The British also launched the world's first factory processor, integrating catching with processing and freezing. The 220-foot *Fairfree* began trial operations on the Grand Banks of Newfoundland in 1948.¹³ Her successor, the 280-foot *Fairtry*, arrived on the Grand Banks in 1954. The design was copied by a dozen different nations, setting the final stage for the collapse of one of the world's greatest resources, Atlantic cod.

One of the most substantial expansions of fishing capacity came in the Soviet Union. Fishing in Russia had been generally underdeveloped. The bulk of the Russian catch before World War II came from the Caspian Sea and other inland waters. The systematic investigation of the Barents, Black and Baltic seas was begun in the 1940s and expanded to the Sea of Japan and the Okhotsk

¹² *Commercial Fisheries Review*, April, 1949, 59.

¹³ William W. Warner, *Distant Water: The Fate of the North Atlantic Fisherman* (Boston: Little, Brown and Company, 1987), 36.

Sea; studies revealed a large biomass of fish which had not been exploited.¹⁴ In 1946, the Soviets announced a five-year plan for development of the fishing industry, designed to increase harvests beyond the prewar level. The fisheries goal for 1950 was to increase the catch by at least 50 percent over pre-war levels, to 340,000 mt.¹⁵

The Soviet fisheries got a boost from U.S. aid. Between June 22, 1941, and Sept. 20, 1945, 8.1 million tons of U.S. ships went to Russia, and the registry of another 5.3 million tons was transferred to the Soviets.¹⁶ Included in the lend-lease program was \$21 million spent on fishing boats, paying for 23 boats, including 10 cannery vessels and eight refrigerator vessels.¹⁷ The Soviets also went on a substantial spending spree.¹⁸ Between 1945 and 1961, about 3500 modern medium and large trawlers and refrigerator ships were added to the fleet. The program started in the late fifties when orders were placed for prototype fishing vessels in the Netherlands, Sweden, Finland, Denmark, Japan, and in the United Kingdom and Germany. One of the first purchases in 1954 was a \$20

¹⁴ P.A. Moiseev, *The Living Resources of the World Ocean (Biologicheskie Resursy Mirovogo Okeana)*, trans. Israel Program for Scientific Translation (Jerusalem: Israel Program for Scientific Translation, 1971). 272.

¹⁵ *Commercial Fisheries Review*, November, 1946. 46-47.

¹⁶ Albert L. Weeks, *Russian's Life-Saver: Lend-Lease Aid to the USSR in World War II* (Lanham: Lexington Books, 2004), 152.

¹⁷ *Pacific Fishing*, December, 1947. 15.

¹⁸ *Commercial Fisheries Review*, October, 1949.

million order for 20 modern fishing trawlers, placed with Brooke-Marine, Ltd. of Lowestoft.¹⁹ After the *Fairtry* appeared on the Grand Banks of Newfoundland in 1954, the Soviets built two dozen copies.²⁰

Canada was also embarking on an extensive program of fisheries development, aimed at providing fish for the growing American market. The proposal called for improved refrigerated railcars, a cooperative advertising campaign with industry, and an extensive program of research into technological developments.²¹ Fish products were an important component in Canada's balance of trade. During the War, there had been repeated patriotic appeals to the obligation of Canadians to produce as much food as possible for the war-torn British Empire. Fisheries also offered a way to increase employment in areas of the country where job opportunities were limited. The government established a small-boat insurance program in 1953 and the Fisheries Improvement Loans Act was set up in 1955 to provide loans to purchase or repair fishing boats and equipment.²² The Canadian government made fishermen eligible for a special fishermen's unemployment insurance program in 1957, designed to pay benefits to seasonal workers.²³

¹⁹ Anthony C. Sutton, *Western Technology and Soviet Economic Development, 1945-1965, Vol. 3*. (Stanford: Hoover Institution Press, 1973), 287.

²⁰ William W. Warner, *Distant Water: The Fate of the North Atlantic Fisherman* (Boston: Little, Brown and Company, 1977), 46.

²¹ *Canadian Fisherman*, June, 1949, 8.

²² The Department of Fisheries Canada and the Fisheries Research Board. *The Commercial Fisheries of Canada*. Ottawa, 1956, 120.

²³ William B. Schrank, "The Failure of the Canadian Seasonal Fishermen's Unemployment Insurance Reform During the 1960s and the 1970s," *Marine Policy* 22 (1) 1998, 67-80.

Fishing in the Southeast Asia region had been badly disrupted by the war. Many boats had been sunk, processing and ice plants damaged, and the importation of twine, nets, sail cloth, hooks, wire, and other materials needed to fish had been cut. The transportation and marketing systems had been disrupted, and few consumers had money to pay for food. Fish landings throughout the region during 1945 and 1946 were severely depressed, according to John G. Butcher in his account of the history of marine fisheries in Southeast Asia.²⁴ But Butcher goes on to note how quickly fish catches returned to pre-war levels; fisheries in Malaya were equal to pre-war catch levels in 1948 and Indonesia by 1951. Japanese fisheries would be close to pre-war levels by 1947 and would exceed them in 1948.

Many countries entered the high seas tuna fisheries, and that meant trying to access the world's largest market for canned tuna, the United States. Albacore tuna showed up in the waters off British Columbia in the mid-1940s, prompting the Canadian government to begin experimental fishing operations to help expand the Canadian share of the catch. The Rockefeller Foundation backed Australian aviator Harold Gatty in building a tuna cannery in Fiji. A tuna cannery was built in American Samoa, and there were negotiations with the French for a cannery in Tahiti.²⁵ Australia began comprehensive pelagic fish surveys in its

²⁴ John G. Butcher, *The Closing of the Frontier: A History of the Marine Fisheries of Southeast Asia, 1850-2000* (Singapore: Institute of Southeast Asian Studies, 2004), 168.

²⁵ *Commercial Fisheries Review*, February, 1949, 58-59.

northern waters in late 1949, and sent its first catches of tuna to the U.S. the following year.²⁶ The American Tuna Association argued in 1949 that 28 countries were producing tuna packed in oil, and eighteen of them were exporting tuna into the U.S. Before the war, there had only been imports from four or five countries.²⁷

7.3 American Funding of Fishery Expansion

The American government was also heavily involved in rebuilding or expanding the fishing fleets of other countries. This was especially true of Iceland, where the Americans had built a major military base during the War. American money was involved in the building of a modern new fishing fleet and processing plants.

Americans were involved in or created a number of additional programs after the War, such the United Nations Relief and Rehabilitation Agency. The Marshall Plan in 1947 provided \$13 billion in relief money for Europe, as well as providing a market for American goods. The Point Four Program, announced by President Truman in 1949, was called a “bold new program for making the benefits of our scientific advances and industrial progress available for the improvement and growth of underdeveloped areas.”²⁸ There were fisheries

²⁶ *Commercial Fisheries Review*, January, 1950.

²⁷ American Tuna Association files, Box 18, Folder, “Fisheries Testimony,” Testimony to the Sub-Committee on Fisheries of the Merchant Marine and Fisheries Committee, 1949, Scripps Institution of Oceanography.

²⁸ John H. Perkins, *Geopolitics and the Green Revolution: Wheat, Genes, and the Cold War*. (New York: 1997) Oxford University Press, 144.

components to both the Marshall Plan and the Point Four Programs. Point Four, an assistance program to other nations, had a fishery component of \$1.2 million during the first year, with the U.S. picking up two-thirds of the costs.²⁹ Various other aid programs had fisheries components, such as United Nations Relief and Rehabilitation Administration (UNRRA). During 1947, shipyards in Puget Sound completed 41 purse-seine-trawlers vessels ordered by UNRRA for China. Most of the boats were steel, with diesel engines and combination winches.³⁰

The Office of the Military Government for Germany purchased a dozen American trawlers to help rebuild the Germany fishery in 1949.³¹ Fishery development experts were active throughout Latin America, and in countries as diverse as Greece and South Africa. Americans also invested heavily in foreign fishery operations. The Foreign Economic Administration had built the largest fish cannery in Peru during 1945.³² During the war years, when protein sources had been tight and fishing curtailed, the cannery processed bonito, packaged in oil. There was no market for the product in Latin America, but the fish was exported to the U.S. under a tariff of 22.5 per cent.³³

The most visible symbol of American government support for the fishing industry was the *Pacific Explorer*, the 423-foot converted World War I freighter. The project was originally designed to catch and process fish for delivery to the

²⁹ *Pacific Fisherman*, September, 1949.

³⁰ *Pacific Fisherman* Yearbook, 1947, 156.

³¹ *Commercial Fisheries Review*, October, 1949. 41-43.

³² Harry S. Truman Presidential Library, OF 61, C to K, folder OF 61 F.

³³ American Tuna Association files, Box 18, Folder, "U.S. Tariff Commission," Testimony of Montgomery Phister, Feb. 4, 1952, Senate Committee on finance with respect to H.R. 5693," Scripps Institution of Oceanography.

troops in the Pacific. With peace, the project was shifted to doing exploratory deep-sea fishing off Alaska, with a price tag of \$2 million.³⁴ This mission shifted again; the ship would pioneer an American king crab fishery in Alaska during the winter, then move to Latin American waters to fish for tuna. By the time the Restoration Finance Corporation (RFC) was saddled with the project, it had expanded to include five 100-foot steel purse seiners to go with the ship (when bids were higher than projected, the project was scaled back to four auxiliary fishing boats). A biologist was assigned to the cruise, to collect information on fish stocks, while a fisheries technologist worked to refine canning and freezing techniques. There was another new political objective: a trip to the Central Pacific, to the Trust Islands, to fish for tuna.³⁵ By the time the ship was converted in a Bellingham, Wash., shipyard, the price reached \$3.75 million. The four steel purse seiners pushed the price tag to \$4.75 million.

While the U.S. invested in rebuilding fishing fleets in other parts of the world, especially Japan, the majority of aid for American fishermen came through the transfer of vessels from the military to the civilian sector.³⁶ For the fishing industry this meant Navy boats were turned over to fishermen. In San Diego, where 52 of the larger tuna boats had been conscripted for war use, fishermen were offered new Navy boats. In early 1947, the Navy announced that 23 new boats would be offered to the fleet at a cost of between \$120,000 and \$130,000

³⁴ *Seattle Post-Intelligencer*, June 23, 1945.

³⁵ *The Seattle Post-Intelligencer*, April 25, 1947.

³⁶ Gerald D. Nash, *World War II and the West: Reshaping the Economy* (Lincoln and London: University of Nebraska, 1990), 188.

each, at a time when building a new tuna clipper cost about \$150,000.³⁷ At least a half-dozen military vessels in the 300-foot range were bought by fishing industry companies in Seattle. They were converted to serve as transport vessels for the rapidly expanding American tuna fishery off Latin America. The military assistance was a significant factor in the expansion of the American fishing industry after the war. But it was an indirect means of helping the industry because many of the vessels, especially the 300-foot landing crafts, had not been designed with fishing in mind. The ships were expensive to convert, and costly to operate. Ultimately, they may have retarded the industry's advancement, locking it into a focus on processing at sea, at a time when the rest of the world's fishing industry was developing the ability to not only freeze fish at sea, but for the processor to also catch the fish, eliminating the need for a fleet of catcher boats.

While American fishermen prided themselves on their free enterprise system, and in theory rejected subsidies, in reality the federal government was escalating the amount of money it was spending on fisheries management. The U.S. Fish and Wildlife Service had actually seen its budget reduced between 1930 and 1940; the 1930 appropriation was \$2.5 million, while the 1940 budget was \$2.4 million. The appropriation for fiscal 1950 was \$10.8 million. With the increased money came increased attention, and conflict over the direction of fisheries policy.

³⁷ August Felando, "California's Tuna Clipper Fleet: 1918-1963, part 2 of 3." *Mains'l Haul*, Summer, 1997, 17-39, 31.

7.4 Fishing and the State Department

There were substantial conflicts within the State Department over how to handle fisheries issues. The policies of SCAP, designed to rebuild the Japanese fishery as quickly as possible, alarmed the West Coast fishing industry and its congressional representatives, who were still pushing for the declaration of a conservation zone that would keep the Japanese out of Bristol Bay forever. The Latin American territorial claims, unleashed by the 1945 Truman Proclamations, alarmed the Southern California tuna fishery. And New England, which had fought the importation of low-cost Canadian fillets before the war, now saw its markets increasingly eroded not only by Canadian fish, but by fillets from Iceland and Norway.³⁸

Under a reorganization of the State Department begun under Edward Stettinius during his eight months as Secretary of State in 1944, fisheries had been relegated to the commodity division of the economics branch, along with other “resources, businesses, and trade.”³⁹ Seattle attorney Edward Allen, who represented a number of salmon companies and who served on the International Salmon Commission, was horrified. He immediately began to organize opposition to the decision, arguing that fisheries involved vital national interests and must have a greater voice within the State Department, at least a cabinet position. Allen argued fishery problems involved diplomacy and international law, while

³⁸ Margaret Dewar, *Fishing Industry in Trouble: The Federal Government and the New England Fisheries*. (Philadelphia: Temple University Press, 1983). 46.

³⁹ Dean Acheson to Warren Magnuson, Oct. 24, 1945, Box 27. Papers of Edward Allen, University of Washington Special Collections.

land products involved commodities and economics.⁴⁰ The disregard for fisheries, as far as Allen was concerned, was part of a larger complaint at how the State Department men are “not Westerners and I fear still concentrate their gaze on the Atlantic even if it is now only a puddle in international importance compared with the Pacific.”⁴¹

Fisheries issues reflected the tension between two opposing views on American foreign policy. The internationalists, led by economist Willard Thorp, supported the idea that all countries should have free access to the world’s resources. The “realpolitik” faction, led by a cadre of legal scholars, argued that the U.S. had to act in its own best interests, regardless of the international implications.⁴²

For the internationalists, the three-mile limit and the freedom of the seas were a cornerstone of equality among nations, with all countries having free access to world resources. This was reflected in the Atlantic Charter of 1941 and reiterated in many other declarations, including the Potsdam Declaration of 1945, which set the terms for the surrender of Germany and Japan. One of the thirteen terms governing the treatment of Japan was that it was to have access to raw

⁴⁰ Memo, Edward Allen, Box 50, Folder 21. Papers of Edward Allen, University of Washington Special Collections.

⁴¹ Letter, Allen to Guy Cordon, Feb. 28, 1947, Box 4, Folder 13. Papers of Edward Allen, University of Washington Special Collections

⁴² Harry N. Scheiber, “Origins of the Abstention Doctrine in Ocean Law: Japanese-U.S. Relations and the Pacific Fisheries, 1937-1958,” *Ecology Law Quarterly* 16 (1989), 23-101.

materials it had utilized before the War.⁴³ This group supported the Supreme Commander Allied Powers in seeking to restore Japan's fishing status to pre-war levels.

The leading exponent of this view in the State Department was Willard Thorp, a former economist at Columbia University, who headed the International Trade Policy Division in 1944.⁴⁴ Thorp argued against the Truman Proclamations because they were inconsistent with international economic goals of eliminating trade restrictions.⁴⁵ Expanding territorial claims to protect one industry had the potential to do even more harm to other industries, such as offshore oil. The U.S. had been successful in the past in creating international agreements to regulate fishing, using catch limits and closed seasons. Thorp suggested it would be more appropriate for the U.S. to work with the new United Nations organizations in securing international consent for policies that would conserve the world's food resources.⁴⁶

This view horrified a variety of opponents, who argued that the U.S. had to look out for its own self-interest. Included in the "realpolitik" group were those who were suspicious about ceding rights to international groups, and a wide variety of senators and congressional representatives, concerned about how post-war trade policies were destabilizing home industries. In addition, there was philosophical opposition, on conservation grounds, from a cadre of legal scholars

⁴³ Charles L. Mee, *Meeting at Potsdam* (New York: M. Evans & Company, Inc., 1975). 314.

⁴⁴ Harry N. Scheiber, "Pacific Ocean Resources, Science, and Law of the Sea: Wilbert M. Chapman and the Pacific Fisheries, 1945-70," *Ecology Law Quarterly* 13, no. 38 (1986).448.

⁴⁵ *Ibid.* 454.

⁴⁶ Memo, Thorp to Secretary, Aug. 17, 1945. NARA RG 59, 811.0145/3-345.

who had called throughout the 1930s for changes in international law to protect fishery resources from unlimited exploitation. They argued that unless international law was changed, it would be impossible to conserve fisheries because the fish could be taken by fishermen from other countries. Conservation of ocean resources demanded that countries, including the U.S., extend their territorial claims to protect fish populations. In this view, conservation demanded enclosure.⁴⁷

Post-war defense policy called for an expansion of American interests in the Pacific, including a string of military bases where the U.S. could keep tabs on its Communist enemies in the Soviet Union and Red China. In this view, American hegemony was cemented by the presence of American fishing boats, helping to bolster the freedom of the seas, freedom for American boats and submarines, planes and fishing boats. Admiral Chester W. Nimitz reasoned that "the ultimate security of the United States depends in major part on our ability to control the Pacific Ocean," and he joined Truman Administration officials in supporting American control over the Pacific Islands."⁴⁸

There was growing domestic discontent about internationalist policies that supported jobs in other countries, as imports from a variety of countries undercut American jobs. Fishing was one of the first industries to feel this competition. The entire industry was united against Thorp's view that fisheries could be sacrificed

⁴⁷ Joseph Walter Bingham and Stefan Albrecht Riesenfeld, *Report on the International Law of Pacific Coastal Fisheries* (Stanford: Stanford University Press, 1938), 14.

⁴⁸ Thomas G. Paterson, *On Every Front: The Making and Unmaking of the Cold War* (Lincoln and London: University of Nebraska Press, 1992), 80-81.

for other economic interests. New England fishermen had had a taste of competition before the war, as cheap Canadian fish fillets eroded their markets. Now the Canadian fish was being joined by fillets from Iceland and Norway, part of post-war foreign policy to encourage trade with the strategically important countries. Southern California processors wondered when Japanese tuna would be back on American grocery store shelves. The U.S. government was spending lavishly to support fishing in other countries, despite the negative impacts on the fisheries at home. When Mexico seized American shrimp vessels in the Gulf of Mexico in September of 1946, Gulf area fishermen joined the fight for a greater voice in State Department policy.⁴⁹ Fishermen on both coasts were demanding federal action in what was becoming a global scramble to secure fishing rights, fish, and control of the American market for seafood.

The West Coast salmon industry had been disappointed that the fisheries proclamation did not go far enough to explicitly prevent a return of the Japanese to Bristol Bay. They immediately began to push for the establishment of a conservation zone that would prohibit future Japanese fishing. A month after the Proclamation, Mexico issued a 200-mile territorial claim. Most of the tuna caught by the U. S. fleet was being caught off Mexico. The Southern California bait boat fleet was already concerned about the escalating charges that Mexico and now other countries were forcing the boats to pay when they sought bait fish off their

⁴⁹ Sept. 19, 1926 memo for files. NARA RG 59, FW 812.628/0.

coasts. As the boats fished further from San Diego, bait had to be caught locally because it would not survive in the warm water the boats circulated to keep the small fish alive.

In January of 1946, Seattle attorney Edward Allen and Miller Freeman, publisher of *Pacific Fisherman*, called an industry-wide meeting in Los Angeles on Jan. 11, 1946, to consider the Proclamation and “to determine on such joint action as may be deemed advisable in behalf of the industry as a whole.”⁵⁰ The salmon and tuna industries agreed to create the Pacific Fisheries Congress, to push for a greater voice at the State Department. It was a rare moment of unity for two industries that did not know much about each other and did not yet understand how divergent their interests really were.

7.5 Expanding Fishing Opportunities

In a 1944 joint resolution, Congress had directed the U.S. Fish and Wildlife Service to survey the extent and condition of all marine and freshwater fishery resources, including the “high seas resources in which the U.S. may have interests or rights.”⁵¹ Rep. Joseph R. Farrington of Hawaii introduced a bill to provide for the investigation and development of fisheries in Hawaii in 1945. Japanese fishermen had supplied tuna to the Hawaiian market and the loss of the vessels led to demands for federal assistance in developed Hawaiian fishery resources. The bill sought \$350,000 for onshore facilities, \$500,000 for a full-

⁵⁰ Miller Freeman Papers, Box 5, Folder 36. University of Washington Special Collections.

⁵¹ Harry N. Scheiber, “Pacific Ocean Resources, Science, and Law of the Sea: Wilbert M. Chapman and the Pacific Fisheries, 1945-70,” *Ecology Law Quarterly* 13, no. 38 (1986). 394.

scale oceanographic research vessel, and \$175,000 for an experimental fishing vessel, budget levels that were astonishingly high compared to the tiny amounts that had been spent on ocean research during the 1930s.⁵²

The bill was enthusiastically endorsed by Wilbert McLeod Chapman, who was back at his desk as the Curator of Fishes at the California Academy of Science. While he had collected thousands of fish during his eighteen months in the equatorial Pacific that needed to be catalogued, he was spending most of his time on fishing politics. Through the winter of 1946, Chapman worked to mobilize West Coast fishing interests to support expansion of research efforts in the Pacific. The Japanese were aggressively expanding their fisheries (drawing complaints from Korea and China) and the Soviets were expanding as well. They had sent scientific fishing expeditions to Antarctica and into the eastern Pacific the previous summer. “Both these nations are moving more alertly than we are,” Chapman wrote, pointing out that Japanese harvests would reach 80 percent of prewar levels during 1946.

The American needed to increase their spending on fisheries research if they were to match the research the Japanese had been doing. One Japanese journal had more than thirty reports on tuna research between 1932 and 1944. “You will not find half that many American reports on the subject in this length of time in all American scientific journals,” Chapman wrote.⁵³ The scope of the Japanese fishery research undoubtedly inspired Chapman’s vision of how an American

⁵² Ibid, 407.

⁵³ Chapman to Jeff Kibre, May 12, 1946. Box 18, Folder 13. W.F. Thompson papers, University of Washington Special Collections.

research program should be designed. Letters frequently mention the Japanese industry had the assistance of five research vessels during the 1930s, while the Americans were spending virtually no money on high-seas fisheries research. The Japanese fishing had been severely crippled by the war and the Occupation, but Japanese fishermen retained their reputation as the world's best, supported by the world's most extensive research system.

The Farrington bill failed to pass in 1946, primarily because Congress thought there was too much emphasis on Hawaii. California interests wanted the bill re-written to direct research at the eastern half of the Pacific, adjacent to the areas California fishermen were already working off Central and South America. Chapman turned to two old friends, Oscar Sette and Milner B. Schaefer, to help re-write the bill. Schaefer was trying to resume his studies towards a doctorate under W F. Thompson at the University of Washington. Their enthusiasm over a research program for tuna in the Pacific drew a stern scolding from their old teacher, who warned that it was impossible to set up a research program and expect quick results. Speaking from the vantage point of almost four decades of research in one fish (halibut) and a fishery in a relatively small geographic area of the North Pacific, Thompson issued a warning to his former students:

Everything sounds new, immediate, and exciting, but there must be a long-time program of exploration and preliminary work before some of the problems can be approached properly. I am very skeptical of the ability of scientific expeditions to determine the abundance of species in different parts of their range. It will probably be many years before we are in a position to describe these differences in abundance and differentiate those which are

due to defects in methods of fishing, to variations in availability of fish, and to the actual movements or survival of the stock... Consequently, I hope that the tremendous enthusiasm with which you and your friends face the South Pacific will not lead you to neglect the sound approach. There will be many years of exploration, accumulation of background data, and expansion of the commercial fisheries before some of the great problems which are now so light-heartedly listed for attack can be approached.⁵⁴

Others were less critical. California Governor Earl Warren named a Tuna Fishing Industry Project Committee on Jan. 18, 1946, and the group promptly passed a resolution supporting passage of the Farrington Bill. A second resolution called for a reorganization of the State Department to create "an effective division for the fisheries."⁵⁵

Chapman was in touch with Edward Allen in Seattle, trading views on how lobbying visits to the State Department had gone. Chapman's advice was that reorganization would not be possible without the support of the entire fishing industry. "We scientific members can be useful only in a restricted manner," Chapman added,⁵⁶ but he had nevertheless thrown himself into the struggle to elevate fisheries at the State Department. In speeches and articles, Chapman pressed that if the U.S. did not act, the Soviet Union and the Japanese would, and both "those governments understand the expansion of their high seas

⁵⁴ Thompson to Chapman, June 11, 1946, Box 18, Folder 13, Papers of W.F. Thompson, University of Washington Special Collections.

⁵⁵ Lyman Lantz to Earl Warren, May 22, 1946, Box 4, Folder 19, Papers of Wilbert Chapman, University of Washington Special Collections.

⁵⁶ Chapman to Edward Allen, July 3, 1946, Box 4, Folder, "Tuna, 1946-1950." Papers of Richard Van Cleve, University of Washington Special Collections.

fisheries to be of vital importance to the welfare of the countries.”⁵⁷ Chapman was in touch with Harold Coolidge of the National Research Council in Washington, D.C., gathering support for an expanded research program in the Pacific. The scheme was “bold and far-reaching,” but not as far-reaching as Japanese and Russian plans for fisheries expansion. He explicitly linked fish to national defense, to have “an American industry strongly developed across the tropical Pacific.”⁵⁸ The expansion of the fishing industry, which would serve national and military goals, had to be linked to the model the Japanese had used, an enormous expenditure into what we would now call biological oceanography.

In an article called ‘The Wealth of the Ocean,’ published in *The Scientific Monthly* in March, 1947, Chapman noted that the Japanese catches before the war amounted to 16 billion pounds of fish a year, four times the American catch; he linked the success to Japan’s fleet of fifty sea-going research ships, compared to two American ships.

In the tropical Pacific we have won an empire of tremendous size. It is an empire of great riches, where the land is as nothing and the sea is everything—an empire in which the native people are small in number and restricted to small points in its vastness; an empire which no other nation save the Japanese covets and which no other nation save theirs and ours can cultivate and make produce.⁵⁹

In letter after letter, Chapman laid out his vision of a strong government agency, supported by industry, and dedicated to conservation of the resource. “The

⁵⁷ Wilbert McLeod Chapman, “Tuna in the Mandated Islands.” *Far Eastern Survey*. Vol. 15, No. 20, Oct. 9, 1945. 317-319. 319.

⁵⁸ Chapman to Harold Coolidge, Jan. 30, 1947, Box 18, Folder “United Nations fisheries conference,” Papers of Edward Allen, University of Washington Special Collections.

⁵⁹ Wilbert M. Chapman, “The Wealth of the Oceans,” *The Scientific Monthly*, 65 (3) 1947. 192-197.

Presidential Proclamation of 1945 changed the management of the high seas fisheries from the field of political necessity to the field of biological necessity. If it does not mean this, it means nothing.”⁶⁰ If conservation zones were to be created in the ocean, they must be based on the geographic range of the fish populations. The State Department needed fisheries science.

This point I want to underline and drive home: High seas fishery research and high seas fishery regulation under the terms of the Presidential Proclamation are opposite surfaces of the same mirror and cannot be detached from each other. The latter cannot be undertaken without the former.⁶¹

In Chapman’s vision of the Pacific Fisheries Frontier, American science forged an allegiance with fishermen, teaming up to pioneer the settlement of a new West. There was urgency, since SCAP was trying to restore the Japanese fisheries, especially in the Trust Islands. Chapman envisioned American boats dominating the rich tuna grounds the Japanese had pioneered in what were now the U.S.-controlled Mandated Islands.

The Pacific Fisheries Congress had not been idle. Through 1946, they pressed their point of State Department representation for the fishing industry, through a series of newspaper articles and letters to officials. In December of 1946, Washington Rep. Thor Tollefson called a hearing in a subcommittee of the House Merchant Marine and Fisheries Committee. Representatives of the governors of Washington, Oregon, and California met with Under Secretary

⁶⁰ Chapman to Montgomery Phister, March 13, 1947, Box 18, Folder 13. William F. Thompson papers, University of Washington Special Collections.

⁶¹ Chapman to Montgomery Phister, March 13, 1947, Box 18, Folder 13. Wilbert M. Chapman papers, University of Washington Special Collections.

William L. Clayton on Dec. 18, 1946. In a follow up memorandum, the group argued that placing fisheries within the economic section of the State Department and treating fisheries as commodities meant that it was impossible for policy makers to be aware of the consequences of proposed actions by the U.S. or other countries. The State Department offered to appoint a fishery advisory committee, and the West Coast response was that responsibility for the advisory group could be transferred to the Special Assistant when he was appointed.⁶² But despite all the work, in April of 1947, *Pacific Fisherman* carried an article saying there would be no change in the department's organizational pattern.⁶³

But there was now a new Secretary of State. General George C. Marshall had replaced James Byrnes, and Marshall was more sympathetic. Washington Senator Warren Magnuson laid out the problem for him in an April 1, 1947, letter: the U.S. had given the Russians a fishing fleet through the Lend-Lease Program, but had not spent any money to help any American fishermen. "My best information now is that Russia is about to invade American North Pacific fishing grounds with the ships which we gave them and catch fish to sell in the American market,"⁶⁴ Magnuson wrote. The coming Soviet invasion clearly had to be repelled.

⁶² Monrad Wallgren to William Clayton, Jan. 13, 1947, Box 10, Folder 5. Wilbert M. Chapman papers, University of Washington Special Collections.

⁶³ *Pacific Fisherman*, April, 1947, 27.

⁶⁴ Warren Magnuson to George Marshall, April 1, 1947. NARA RG 59, 811.628/4-147.

7.6 The Expansion of Tuna Fishing

Catching tuna had always been a southern California fishery. The waters off Oregon, Washington, and British Columbia were colder, the home of salmon, not their warmer blooded cousins, albacore tuna. But starting in 1936, tuna began to show up off the Columbia River, and by 1944 the Oregon catch was 22.5 million pounds, as much as the California albacore catch had ever been, an enormous windfall for the Columbia River Packers Association (CRPA), as well as other Northwest canners.⁶⁵ The CRPA rapidly expanded facilities to process albacore at Astoria, where much of the catch was delivered. Albacore had appeared about 150 miles off the West Coast of Vancouver Island in 1943; now, about 400 boats joined in the fishery, and some of the larger boats prepared to fish up to 500 miles off the coast. "Should this season prove successful," wrote *Canadian Fisherman* magazine, "some of the 'highliners' are discussing building tuna clippers, as now used off the coast of the United States."⁶⁶ The Canadian government responded with a research program devoted to tuna, including research on gear, and how to hold the fish at sea in the best condition.

American tuna men were setting records. The 1946 pack was a record of 4.3 million cases and the markets could have absorbed more. The first issue of *Tuna Fisherman Magazine* hit the docks in December of 1947, with an eye-catching blonde in a two-piece bathing suit on the cover, pretending to be a mermaid. The magazine's first editorial urged Congress to support the Farrington

⁶⁵ Richard Van Cleve Papers, Box 2, Folder, "Chapman, W.M., 1940-48." University of Washington Special Collections.

⁶⁶ *Canadian Fisherman*, July, 1946, 8-9.

Act, pointing out that the money wasn't an appropriation "*but an investment* that will repay the people of the United States many times over in the acquisition of rich and valuable food resources."⁶⁷ An editorial in the second issue quoted Chapman warning that the Japanese high seas fishery was expanding rapidly. Time was of the essence, Chapman wrote; if the U.S. delayed, other nations would expand into "areas legitimately our own."⁶⁸ The Farrington Bill passed in 1947, with support from the Fish and Wildlife Service, the Navy, and West Coast fishing interests. It established the Pacific Oceanic Fisheries Investigation (POFI; its budget for 1950-51 was \$800,000.)⁶⁹ The \$520 million Tydings Bill, an economic assistance bill for the Philippines, also passed. It included a fishery component and a five-year study of the South Pacific fisheries, with three new research vessels, the *Spencer F. Baird*, the *Theodore N. Gill*, and the *David Starr Jordan*, to do the work.

Other research vessels were also built during the period, to do exploratory fishing and oceanographic research.⁷⁰ Off New England, the *R/V Delaware* located new fishing ground for ocean perch (*Sebastes marinus*) in 1956.⁷¹ Off Washington, the *R/V John N. Cobb* explored for pink shrimp and groundfish. The results of the exploratory fishing were published in a series of fisheries leaflets, and in a greatly expanded publication, the *Commercial Fisheries Review (CFR)*.

⁶⁷ *Tuna Fisherman Magazine*, December, 1947. Italics in the original.

⁶⁸ *Tuna Fisherman Magazine*, Vol. 1, No. 2, 1948.

⁶⁹ *Pacific Fisherman*, May, 1950, 19-21.

⁷⁰ *Commercial Fisheries Review*, March, 1950, "The Fish and Wildlife Service—Ten Years of Progress," 1-9.

⁷¹ Michael Weber, *From Abundance to Scarcity: A History of U.S. Marine Fisheries Policy* (Washington, D.C.: Island Press, 2002), 7.

Gear development, new types of processing equipment, information on the best way to freeze fish, all was passed on to the burgeoning U.S. fisheries industry. The foreign news section of the CFR grew rapidly, as it chronicled similar investment being made in dozens of other countries. Fishing was big business.

But the record tuna pack had come at a cost: increased tension with Latin America. Costa Rica had barred purse seine boats from its waters, and there were rumors of similar actions by Panama and Mexico. Mexico sharply increased fees for American sport and commercial fishermen, in the Gulf of Mexico and the Caribbean, as well as the Pacific coast.⁷² The catch was increasing, and so were the tensions.

7.7 The First Voyage of the *Pacific Explorer*

By the time the conversion of the *Pacific Explorer* was completed in late 1946, its owner, Seattle's Nick Bez, had become a national figure. Few people outside of Seattle, or the Alaskan fishing industry, knew Bez when he rowed the boat that took Harry Truman fishing in June of 1945, on his first trip to the Northwest as president. But the pictures of the fishing trip, with President Truman in a casual sweater, and a big, burly man in a suit, tie, and fedora manning the oars in the small boat, had captured the imagination of the news media. Bez was the embodiment of the American dream. (See Illustration 2, 221)

He was born Nikola Bezmalinovic, on Aug. 25, 1895, on the island of Brac in the Adriatic Sea, the oldest of six children. He learned to fish as a child. When

⁷² *Commercial Fisheries Review*, July, 1947, 40-41.

he was fifteen, he borrowed \$50 from his father and booked passage to New York, where he worked in a Brooklyn restaurant for the train fare west, where there was a community of Dalmatians in Tacoma, Wash.⁷³ He shipped as a deckhand on a towboat bound for Alaska, and when he returned to Seattle, he acquired a rowboat, then a gas boat; by 1914, he had his first seine boat. In 1922, he went to work as a superintendent at an Alaskan cannery, saving his money until he heard about an abandoned cannery on Peril Strait, near Sitka. He paid \$5,000 for the plant and went into debt to buy \$150,000 worth of canning machinery. The first year he paid the bills. The second year the cannery netted \$175,000.⁷⁴ In 1931, he bought three single-motored Lockheed Vegas, recruited a cadre of bush pilots, and a few weeks later, Alaska Southern Airways was making the first scheduled flights in the history of the Alaska territory. Bez sold out to Pan American three years later, and plowed the profits back into the salmon business.

By 1939, Bez owned three of the largest canneries in Alaska and two gold mines.⁷⁵ He also owned the Alaska Southern Packing Company, which operated a floating cannery called *La Merced*. He created a new company, the Intercoastal Packing Company, and bought a 390-foot steamer called the *Orgontz* which he intended to convert to a floating cannery. The *Orgontz* was equipped with two

⁷³Mary Ann Petrich and Barbara Roje, *The Yugoslav in Washington State: Among the Early Settlers* (Tacoma: Washington State Historical Society, 1984), 59.

⁷⁴R.H. Calkins. "Captains of the Pacific Northwest Maritime Industry." *The Marine Digest*. Sept. 20, 1952, 25.

⁷⁵*Time*. Nov. 4, 1945, "The Baron of the Brine," 92-93.

Continental Can Co. high-speed machines, two ‘Iron Chinks,’ (that gutted and took the heads off the fish, replacing the need for Chinese labor) and four retorts and fished with a company of gillnet boats in Bristol Bay.⁷⁶

“The West had had blustering barons by the barrel, but Nick Bez, the lord-high-everything of the salmon industry and friend of Presidents, tops them all for color,” wrote Richard J. Neuberger (1912-1960), who made a virtual career out of selling the Bez story to a variety of national magazines and newspapers.

Neuberger was a correspondent for *The New York Times* between 1939 until 1954, when he was elected to represent Oregon in the Senate. Bez very much fit the image of Neuberger’s heroic vision of the development of the West.⁷⁷ *Time* magazine weighed in, calling Bez “The Baron of the Brine,” and saying the vessel “hopes to prove that U.S. fishermen can replace the Japanese who, prewar, caught and processed 66% of the world’s tuna in their floating canneries, virtually monopolizing the \$8 million-a-year catch of the Bering Sea’s huge king crabs.”⁷⁸

The original plan had been to send the *Pacific Explorer* to Alaska, to explore for king crab. But the conversion took longer than expected and when the vessel was finally delivered to Bez in late 1946, he decided to make the shakedown cruise in the warm tropical waters of Costa Rica.

Pacific Fisherman described the ship as the country’s first fully-integrated factory ship, designed for “year-round operation in hemispheric fields...She is no

⁷⁶ *Pacific Fisherman*, 1939, 27.

⁷⁷ William Robbins, *Landscape of Promise: The Oregon Story, 1800-1940* (Seattle: University of Washington Press, 1997), 294.

⁷⁸ *Time*, Nov. 4, 1946, 94.

make-shift assembly of odds-and-ends, for she has been converted and equipped without stint, either of money or brains.”⁷⁹ It was not only the largest fishing boat in the world, at 423 feet, but it was also the most sophisticated, and probably the most expensive.

From the start, the *Pacific Explorer* was loaded with political baggage. It was seen as an affirmation of American power on the seas. It was also an affirmation of American science and technology. The *Pacific Explorer* represented much that the American fishing industry had learned during the six decades it had been exploiting salmon in Alaska. The industry had concentrated in catching as many fish as it could, canning them in Alaska, then transporting the canned product south for distribution, primarily to Seattle, but also, increasingly, to Astoria, Oregon, home of the Columbia River Packers Association (CRPA), and the West Coast’s biggest cannery, with sales of \$8.6 million during 1945.⁸⁰

Many of the firms that made up the CRPA had begun fishing on the Columbia River in the 1880s. It was only after reorganization in 1924 that the name Columbia River Packers Association was created. By that time the company consisted of five canneries, two cold storage plants, one machine shop,

⁷⁹ *Pacific Fisherman*, January, 1947, 25-35.

⁸⁰ *Time*, Nov. 4, 1946, 94.

one can factory, and eleven warehouses and receiving stations. Three of the canneries were in Alaska, and it also owned a floating cannery, the *SS Memnon*, operated at False Pass on the south side of the Alaska Peninsula.⁸¹

The CRPA's longtime chairman, W. L. Thompson, sold his shares in 1946 to Nick Bez and Transamerica Corporation of San Francisco, the investment affiliate of Amadeo P. Giannini's California banking kingdom.⁸² After buying into the CRPA, Bez had the company acquire two 326-foot LST's, a military landing craft, and converted them into refrigerated motherships, each capable of carrying 1,000 tons of frozen yellowtail from the South Pacific back to Astoria for processing.⁸³ The vessels were renamed the *Tinian* and the *Saipan*. The *Tinian* brought its first load of Japanese tuna back to Astoria sometime in 1948.

With the *Pacific Explorer*, the *Tinian*, and the *Saipan*, the Columbia River Packers Association, already a West Coast and Alaskan powerhouse, was poised to attempt to dominate the post-war tuna fishery off Latin America. Since the early 1900s, the CRPA had excelled at sending sailing ships to its Alaskan canneries, where small gillnet boats delivered their catch to the company's Chinese processing crew.

It was a business model that had worked in the highly competitive Northwest fisheries environment, and there seemed to be no obvious reasons why it would not work to harvest tuna off Latin America. The most significant

⁸¹ Papers of Jay Bowerman, attorney, Box 3 Accession Number 95.55.366, Columbia River Maritime Museum, Astoria.

⁸² *Newsweek*, May 20, 1946.

⁸³ *The Bumble Bee*, August, 1947. Columbia River Packers Association, Columbia River Maritime Museum.

difference was that the company would buy the tuna from its purse seine fleet, freeze them, then bring them back to Astoria for canning. It really ought to have been a simpler operation than dealing with salmon in Alaska.

Bez's extensive experience in operating floating canneries made him an obvious choice to run the *Pacific Explorer*. But bids were never issued and from the start there were questions about the contract, which called for Bez to lease the boat and operate it, and to pay the Restoration Finance Corporation \$50,000 a year, or 55 percent of the profits, whichever was greater. Rowing the boat when Harry Truman went fishing made Nick Bez famous, but the project couldn't shake the taint of political cronyism.

In January of 1947, after a final outfitting in Astoria, the *Pacific Explorer*, accompanied by twelve trawlers rigged for purse-seine fishing, set off on its shake-down cruise, to Costa Rica. The expedition's airplane, used to spot schools of tuna, was based onshore. The trawlers would catch the fish, then transfer it to the mothership, where a crew of "skilled cold storage men was recruited from Astoria plants to handle this part of the job." The ship had the capacity to freeze and transport 3,800 tons of tuna.⁸⁴ In addition to exploring the catching and freezing of tuna, a biologist and fisheries technician was assigned to the crew would "study the ocean life and currents and temperatures."⁸⁵ The biologist was Milner B. Schaefer, one of W.F. Thompson's most promising students, now working for the U.S. Fish and Wildlife Service, based in Honolulu.

⁸⁴ *Commercial Fisheries Review*, January, 1947, 12-13.

⁸⁵ *Pacific Fisherman*, January, 1947, 25-35.

Mexico for several years had a law limiting purse seining within one mile of the Coronado Islands. In the spring of 1947, at the urging of San Diego sports fishermen, the Mexican government announced the ban would be enforced.⁸⁶ Costa Rica had also banned purse seining, but soon there were reports that the *Pacific Explorer* was buying tuna and paying \$20 more a ton than the local canneries. By early March, Costa Rica had promulgated a new law, allowing purse seiners to enter its waters, and allowing the *Pacific Explorer* to receive fish provided it paid a \$2 per ton tax to the government.

The American Tuna Association, which represented the bait boats, was furious. It put pressure on its congressional delegation, calling for an investigation into the contract between the Reconstruction Finance Corporation and Bez. Among the ammunition the bait boat owners fired was an affidavit from one of its most respected fishermen, the pioneering M. O. Medina, who claimed that purse seining had progressively destroyed the areas where the boats fished.⁸⁷

In Washington, Rep. Thor Tollefson, chairman of the House Merchant Marine-Fisheries Subcommittee, called on the RFC to explain “why a research fishing vessel, equipped and paid for by the government, is hauling tuna out of Costa Rica waters in competition with San Diego and San Pedro boats.”⁸⁸ At the Washington, D.C. hearing, on May 27, 1947, Tollefson scolded the RFC, saying

⁸⁶ American Tuna Association files, Box 26, Folder “The *Pacific Explorer* Matter.” Scripps Institution of Oceanography Library.

⁸⁷ Ibid.

⁸⁸ Ibid.

it had used questionable judgment and the contract was improper. He urged the agency to re-examine the matter. "It is the prettiest little deal you have ever seen, and there are ramifications of this that go way back, and they smack of political patronage," said California Rep. Charles K. Fletcher.⁸⁹

By June, Sam H. Husbands of Transamerica Corporation sent a telegram to the RFC, saying that Bez estimated losses through June at approximately \$75,000, while Husbands placed the loss closer to \$200,000.⁹⁰ By the end of the month, the RFC had ordered the boat back to Astoria and rewritten the agreement. It arrived with 2,272 tons of frozen yellowtail tuna and a score of Costa Ricans who had been hired to replace the Astoria crew as the vessel cruised around, trying to buy tuna. The ship and one of its four trawlers was ordered to Alaska to fish and process crab.

The *Pacific Explorer* was not the only large ship to expand into Latin American waters. In the spring of 1947, the British firm of Christian Salveson announced it planned sperm whaling off the coast of Peru when the Antarctic whaling season closed.⁹¹ On June 23, 1947, Chile increased its sovereign waters, and on Aug. 1, 1947, Peru extended sovereignty to the limits of her continental shelf, or 200 miles, whichever was further.⁹² The situation in Latin America was increasingly tense.

⁸⁹ Ibid.

⁹⁰ Papers of John Steelman, White House Confidential Files, Telegram from Sam Husbands to John Goodloe, RFC, June 10, 1947, Harry S. Truman Presidential Library.

⁹¹ Memorandum, Proposed sperm whaling operation by British off coast of Peru .April 7, 1947. NARA RG 331 Box 5314.

⁹² *Pacific Fisherman*, October, 1947, 75.

The 423-foot American ship, with its fleet of twelve large purse seiners, surely played a role in alarming Latin American governments about what could happen to their fish stocks without protective action. There was already concern about how many baitfish the American fleet was taking. Local fishermen accused the Americans of overfishing local stocks. The Americans responded there was no scientific evidence that baitfish were being depleted and accused the Latin Americans of demanding “tribute.”⁹³ Yet *Pacific Fisherman* had carried articles as early as 1932, noting that it was getting increasingly difficult to find bait and that the fishery needed three million bait fish a year.⁹⁴

7.8 The Gang of Five

In September of 1947, the Pacific Fisheries Congress stepped up its effort to create change at the State Department. They created a group they called the Gang of Five, chaired by Tom Sandoz of the Columbia River Packers Association, to push their argument for an assistant secretary of state for fisheries affairs. A subcommittee meeting of the House Merchant Marine and Fisheries Committee, called to discuss the peace treaty with Japan, heard testimony lamenting how the State Department was ignoring the perils facing the

⁹³ *Pacific Fisherman*, “Americans need pay no tribute to fish anywhere outside the Three-mile Zone.” June, 1949, 27.

⁹⁴ *Pacific Fisherman*, “What about Tuna Bait Fish?” March, 1932, 23.

American fishing industry.⁹⁵ Northwest politicians asked for updates on the status of the \$21 million Russian factory fleet that had been supplied by the Americans.⁹⁶

The fishing industry was expressly linked to military security in the statement the Pacific Fisheries Conference sent to Marshall in January of 1948. It urged the U.S. to begin “activation” of the Truman Proclamation, and to begin negotiations for treaties that would safeguard the rights of American fishermen, protect fishing areas developed and discovered by Americans.⁹⁷ Specifically, the Conference wanted a position within the State Department—a fisheries attaché--and to be consulted over the proposed Japanese treaty. By April, Marshall wrote to Washington Representative Thor Tollefson, saying the Department was undergoing another reorganization, now that the European Recovery Program had been established. “Small, functional staffs will be created to advise the Secretary on the formulation of overall policy.” In the meantime, a temporary position of Special Assistant to handle fishery matters would be created. When the reorganization was completed, “it is my intention to relocate the fisheries work in a suitable place in the Department.”⁹⁸

The April issue of *Tuna Fisherman Magazine* reported that a post, “Special Assistant for Fisheries,” had been established at a salary of \$9,995,

⁹⁵ Memo, Wilcox to Thorp, Oct. 10, 1947. NARA RG 59, 811.628/10-1047.

⁹⁶ *Pacific Fisherman*, December, 1947, 15.

⁹⁷ Papers of Edward Allen, University of Washington Special Collections. No box number, Folder 1945.

⁹⁸ George Marshall to Thor Tollefson, April 23, 1948, Box 4, Folder 23. Papers of Miller Freeman, University of Washington Special Collections.

“thereby assuring the industry a top hand in Washington.” The Department thought an attorney or someone with a legal background would be appropriate. The June, 1948, issue announced the appointment of Wilbert McLeod Chapman.

It had been a whirlwind year for Chapman. He was awarded a Guggenheim Fellowship in April of 1948, which allowed him to spend the summer examining fish collections in Europe. News of the fellowship had barely sunk in before the College of Fisheries at the University of Washington offered him the directorship. He would replace his old teacher, W.F. Thompson, who was relinquishing the reins of the school to run the newly-formed Fisheries Research Institute, designed to investigate the collapse of sockeye runs in Bristol Bay. Chapman was barely on the job before the State Department offer was made.

The announcement was made in Seattle, by Rep. Thor Tollefson, chairman of the House Subcommittee on saltwater fisheries. He was accompanied by *Pacific Fisherman's* Miller Freeman, representing the Pacific Fisheries Conference. Two days after the news of the appointment appeared, Chapman wrote to Richard Croker, Chief of the Bureau of Commercial Fisheries of California, saying he would travel to San Diego on his way back to Washington, D.C., “for the specific purpose of renewing acquaintance with fishery people there and getting their more recent slant on international fishery problems.”⁹⁹ (See Illustration 3, 222).

⁹⁹ Chapman to Richard Croker, June 16, 1948, Box 26, Folder, “Dr. Chapman’s Report.” ATA Files, Scripps Institution of Oceanography.

Fisheries were now an official part of the U.S. Department of State.

Fisheries science was no longer a matter that mainly concerned fishermen and the fishing industry. It was now a subject of official government sanctioning, to be used to justify a range of economic and political objectives. In turn, this diplomatic function would shape the fisheries science adopted by American scientists, and then exported to scientists in other countries throughout the world.

The enormous global expansion in fishing was initially driven by the humanitarian desire to ease the enormous crisis in world hunger. But it set in motion a development process that would create a huge capacity to catch fish, far beyond the ability of any species to reproduce. Coupled with the political dynamics that were evolving around fishing issues, of territorial expansion, and the ideology of freedom of the seas, it would have been impossible to halt the spending once it had started, had anyone tried. But no one did. There was little interest in halting, or even slowing, the expansion, because of the belief that the oceans were full of unexploited fish. "The fishing grounds of the world are teeming with fish of all kinds," the Food and Agricultural Organization of the United Nations reported in 1946. "Fisheries are an international resource. In under-developed areas especially, the harvest awaits the reaper."¹⁰⁰ But reaping that harvest would soon be driven as much or more by political and economic motives as by humanitarian ones. And in the rush to secure new fishing territory, and to fill the fishing niche left by the defeated Japanese industry, there was little

¹⁰⁰Ralph W. Phillips, "Food and Agricultural Organization: Organization, Work, and U.S. Participation," Foreign Agricultural Service Report, 1978, Washington, D.C., 63.

interest in the evidence that W.F. Thompson, E.S. Russell, and Michael Graham had so painstakingly accumulated: that as soon as a fishery starts, the profits begin to decline.

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Chapter Eight

How Could Anyone Disagree?

“No Sovereignty—Free Enterprise—Sustained Yield.”¹
Pacific Fisherman, January, 1949.

Wilbert McLeod Chapman was enormously successful during the three years he spent in Washington, D.C. He presided over the signing of three fisheries treaties, and established two international commissions that are still working today, the International Commission for North Atlantic Fisheries (ICNAF) and the Inter-American Tropical Tuna Commission (IATTC). He was intimately involved in the negotiations that led to the Peace Treaty with Japan, signed in 1951, which opened the way for a fisheries treaty among Canada, the U.S., and Japan, and the creation of the International North Pacific Fisheries Commission (INPFC).

Such international commissions became the preferred American model for post-war fisheries management, either bilateral or multilateral agreements, generally with limited regulatory and or enforcement authority. Chapman was also a key figure in the development of American oceanographic research in the Pacific. He was involved in the creation and the design of the Pacific Oceanic Fisheries Investigation (POFI) and the California Cooperative Oceanic Fisheries Investigations (CalCOFI).

The three commissions were set up to be managed under Maximum Sustained Yield. It was Chapman who framed MSY as the scientific foundation

¹ *Pacific Fisherman*, January, 1949, 17.

under the U.S. High Seas Policy, announced in 1949. Chapman, and his successor as fisheries attaché, William C. Herrington, actively maneuvered to have MSY adopted as the goal of international fisheries policy at a key conference in Rome in 1955. There has been some scholarly attention to the roles played by Chapman and Herrington in the development of post-war fisheries policy, but little that has looked at their contribution towards the development of fisheries science. In particular, both men worked towards the adoption of MSY, helping to translate it from a policy doctrine into a scientific theory that made it impossible to halt or even slow fishing on the high seas unless there was evidence that stocks were being depleted. It was a scientific policy that benefited the fleets of developed nations with distant water fisheries, including the U.S., Japan, and Britain, to the detriment of smaller, poorer nations.

The U.S. is commonly thought not to have been successful in transferring its preeminence after World War II to effective power to influence international fisheries policy. For example, the U.S. failed to have its policy of creating abstention lines, where other countries voluntarily abstained from fishing, adopted internationally (discussed in Chapters 9 and 12). Legal scholar Ann Hollick contends that fisheries were not a priority for the government and its full power was never brought to bear, partly because of the fragmentation of

fishing interests. She characterized U.S. fisheries policy during the post-war period as a scramble by competing American fisheries to maintain the status quo in the face of growing foreign competition.²

It is certainly true that U.S. policy during this period was extremely fragmented. The unity among the various factions of the fishing industry, which had cooperated in creating the fisheries post within the State Department and supporting the appointment of Chapman, was short-lived. The interests of the salmon industry were directly in conflict with those of the tuna industry. The salmon industry wanted enclosure to protect its salmon from other fishermen, but the tuna industry wanted a policy of open seas. It had taken the crises of both industries in dealing with Japan to unite them in the Pacific Fisheries Congress, and to push for recognition of their problems within the State Department.

Nevertheless, American actions during this period decisively shaped the development of fisheries science and international fisheries management processes. Hollick made her analysis in 1982, and she was looking at how successful the American fishing industry had been in terms of its ability to catch fish, relative to other countries. American fishermen were certainly not successful in attaining all their goals during this period, but Americans decisively shaped events in significant and enduring ways.

Three American scientists played central roles in these events. The first is Wilbert McLeod Chapman, the University of Washington ichthyologist who was

² Ann L. Hollick, *U.S. Foreign Policy and the Law of the Sea* (Princeton: Princeton University Press, 1981), 62.

the first appointment to the position of fisheries attaché at the U.S. State Department. The second was his successor, William C. Herrington, who headed the fisheries section of the Supreme Commander Allied Powers Natural Resources Section in Japan. Third was Milner B. Schaefer, a fellow student with Chapman at the University of Washington, first director of the tuna commission, and the author of Surplus Production Theory, a key component in the development of Maximum Sustained Yield. The men were close friends and all were linked by their relationship with W.F. Thompson. Herrington had tutored Thompson in calculus during the years in California: Thompson had persuaded Herrington to switch to studying fisheries at Stanford, his alma mater.³ Chapman and Schaefer were both Thompson's students, and Chapman had briefly replaced Thompson as director of the School of Fisheries in 1949. Chapman played a role in having Schaefer appointed as director of the tuna commission. Both Chapman and Herrington were involved in American policy over Japan, fearing that unless fisheries issues were settled, a peace treaty could not be ratified in the U.S. Senate. And both were deeply concerned about the redevelopment of the Japanese fishing fleet and the impact it could have on the West Coast fishing industry.

There has been substantial analysis of Chapman's diplomatic abilities, by legal scholars Harry N. Scheiber and Arthur F. McEvoy, but most of their analysis was written in the 1980s, before the destruction of many fish species

³ Theodore Pietsch and J. Richard Dunn, "Early Collection Building in Puget Sound and Adjacent Waters," *Collection Building and Ichthyology and Herpetology*, Theodore Pietsch and William D. Anderson, editors. (Lawrence: American Society of Ichthyologists and Herpetologists, 1997).

became evident. Scheiber and McEvoy were more interested in Chapman's role in the development of oceanography, and in the events leading to the start of the Law of the Sea Process in 1958. There has been little critical attention to Chapman's role as a scientist and his promotion of MSY. While Chapman was frequently described as one of the leading scientists of his day, and an expert in Pacific fisheries, his reputation rested mainly on his political skills, not his scientific ones.

8.1 Chapman the "Biopolitician"

In the dedication to a series of essays published in honor of Chapman and Schaefer after their deaths in 1970, Jack Kask wrote that Chapman's greatest contribution was to impress on the State Department the idea that high seas fisheries and oceanography were problems of international diplomacy, and that knowledgeable people from the fisheries field were needed to "further United States and world interests."⁴ Kask called Chapman a "biopolitician," who shook up the State Department as he negotiated three fisheries treaties in less than a year.

Scheiber called Chapman "a brilliant scientific entrepreneur," who was at the center of the development of ocean law between 1945 and 1951. Chapman publicized new approaches to ocean science research and the transformation of marine sciences during the 1950s and 1960s. "Indeed, Chapman indisputably

⁴ J. L. Kask, "Dedication," in *World Fisheries Policy: Multidisciplinary Views*, Brian J. Rothschild, ed. (Seattle: University of Washington Press, 1972), vii.

was one of the principal architects of postwar United States fisheries diplomacy as well as of scientific policy in the 1940s and early 1950s.”⁵ This was true, but Scheiber accepted that Chapman was a “distinguished scientist,” and an expert in resource management.⁶ Scheiber’s focus, however, is on Chapman’s political accomplishments, and his efforts at organizing research, not on his contributions to the development of fisheries science and the management process. Even in his later work on the development of oceanography, Chapman acted as a policy maker, appointed to numerous national and regional policy groups..

McEvoy described Chapman as a key figure in the institution building by the fishing industry, government, and the University of California during the postwar period, a point that is backed up by William T. Burke and Donald L. McKernan, both friends of Chapman, in their introduction to his archival papers at the University of Washington Special Collections.⁷ Chapman had the backing of Washington Senator Warren Magnuson, as well as other state and congressional figures on both coasts. This government backing was a critical link in the enormous expansion of fisheries during this period.

As McEvoy also pointed out, Chapman was firmly in the camp of T.S. Huxley in believing that fishing by humans could not seriously impair a stock of fish. Chapman, like many other American scientists during this period, was firmly

⁵Harry N. Scheiber, “Pacific Ocean Resources, Science, and Law of the Sea: Wilbert M. Chapman and the Pacific Fisheries, 1945-70,” *Ecology Law Quarterly* 13, No. 38, 1986Harry N. Scheiber, “Pacific Ocean Resources, Science, and Law of the Sea: Wilbert M. Chapman and the Pacific Fisheries, 1945-70,” *Ecology Law Quarterly* 13, no. 38 (1986)., 388.

⁶ Ibid., 397.

⁷ Donald L. McKernan and William T. Burke, “Guide to the Wilbert M. Chapman Collection,” (Seattle: University of Washington Libraries, 1977), iv.

convinced that the U.S. acted to conserve its fish stocks, and that harvest policy was firmly grounded in not taking more fish than the runs could sustain.

The depletion of individual fisheries, however, was simply not as important to Chapman as it was to some other scientists because he believed that there were always more to be had, with scientific help. Meanwhile, the political alliance with the industry had been a lucrative one, both for the industry and for most of Chapman's scientific colleagues.⁸

McEvoy argued that Chapman's "phenomenal success as a scientist-politician" was based on the harmony between his expansionist views and the view of the nation as a whole for most of its history, that resources were there to be used, despite the evidence of the collapse of both the sardine fishery in California, and the sockeye runs in Bristol Bay.

Chapman's vision of a Pacific Fisheries Frontier, with a line of American fishing boats consolidating claims to vast stretches of the Pacific, fit with post-war foreign policy objectives for the Pacific. Control of both the Atlantic and Pacific oceans was considered indispensable to national security. The Joint Chiefs of Staff in 1945 proposed a string of military bases in the Aleutians, at Midway, Hawaii, Christmas, Canton, American Samoa, Bora Bora, Clipperton, and in the Galapagos.⁹ While the plans were scaled back due to budgetary constraints,

⁸ Arthur F. McEvoy, *The Fisherman's Problem: Ecology and Law in the California Fisheries* (Cambridge: Cambridge University Press, 1986), 224.

⁹ Melvyn P. Leffler, "National Security and U.S. Foreign Policy." *Origins of the Cold War: An International History*. Melvyn P. Leffler and David S. Painter, ed. (London and New York: Rutledge, 1994), 15-52, 20.

Chapman's vision of American fishing boats strung throughout the equatorial Pacific Ocean resonated strongly with government policies that sought to expand fishing for strategic and economic reasons.

The fishing industry had pushed for greater representation within the State Department, and had succeeded in the appointment of the its favored candidate. Once in Washington, D. C., Chapman found a series of political problems. He was able to come up with a "scientific" solution that, in retrospect, had more to do with ideology than with science.

8.2 A Trio of Fishery Problems

Chapman arrived at the State Department during the summer of 1948, a critical time for the development of American fisheries. Fishery treaties were being negotiated with eleven European countries and Canada to regulate the depleted North Atlantic fisheries. With the collapse of the California sardine fishery, purse seine boats were poured into the tuna fishery off Mexico. Mexico wanted a fisheries agreement that would license the purse seine fleet, while increasing fees on the bait boat fleet. The prospect of increased operating costs came as Japanese tuna was starting to appear on the shelves of American grocery stores, and it was cheaper than American tuna. Costa Rica, the scene of American fishery warfare in 1947, when the *Pacific Explorer* showed up with its fleet of a dozen purse seine boats, was considering expanding its territorial limits and joining forces with Mexico, Argentina, Chile, and Peru. And then there was

the problem of how to handle the fishing issues in the pending peace treaty with Japan. The salmon industry was worried about Japanese boats in Bristol Bay, fishing for salmon.

Within months of arriving in Washington, D.C., Chapman had crafted the U.S. Policy on High Seas Fishing. He announced it Dec. 2, 1948, in a speech to the Chamber of Commerce in San Francisco. The text was published the next month in the State Department Bulletin. The policy was sold as scientifically sound, based in Maximum Sustained Yield. While the science behind the policy was scant, the political benefits of the policy were exceptional. It justified keeping the Japanese out of Bristol Bay. It acknowledged that fishing should be regulated in the North Atlantic. It also affirmed the American right to fish without restrictions off Latin America for baitfish and tuna.

The high seas policy was geared to address the confusion caused by the Truman Proclamation in 1945, and the string of territorial claims it had drawn from Latin American countries. "The net result of the Proclamation so far has been to stir up a mare's nest of problems which had been quiescent and which we are barely keeping under control now," Chapman wrote in 1949. "Most of these problems are embarrassing, if not damaging, to us when the total national interest is taken into account." ¹⁰

The ink on the policy was scarcely dry when a fisheries treaty was signed with Mexico on Jan. 25, 1950. An agreement with eleven European countries

¹⁰ Letter from Chapman to Judge W.C. Arnold, Jan. 3, 1949, Papers of Wilbert M. Chapman, University of Washington Special Collections, Box 15, Folder 14.

was signed Jan. 28, 1950, to regulate fishing in the North Atlantic. By May 31, 1950, a convention had been signed with Costa Rica, and the negotiations included the creation of the Inter-American Tropical Tuna Commission. Chapman was also circulating two sets of proposals for an eventual fishing treaty with Japan. All of the new treaties and the two commissions they created included the policy that fisheries would be managed to produce Maximum Sustained Yield, as defined by Chapman:

The policy of the United States Government regarding fisheries in the high seas is to make possible the maximum production of food from the sea on a sustained basis year after year. So stated, the policy is extremely simple, and it is doubtful that there will be any objection to it from any quarters.¹¹

Chapman was formally adopting what had been unofficial American fisheries policy since the days of Spencer Fullerton Baird and the creation of the U.S. Fish Commission. Baird himself, in an 1877 report, referred to the need for "maintaining the yield of fish generally at its largest figure."¹² The unofficial policy had always been to harvest the maximum number of fish, policies that were labeled as "conservation" in the Progressive Era use of the term: efficient utilization of resources without impairing future viability. British scientist Michael

¹¹ Wilbert M. Chapman. "United States Policy on High Seas Fisheries." Department of State Bulletin, Vol. XX, No. 498, Jan. 16, 1949, 67-80.

¹² Dean Conrad Allard, Jr., *Spencer Fullerton Baird and the U.S. Fish Commission* (New York: Arno Press, 1978). ,316.

Graham, writing in 1955, recalled that he had been told in 1945 that the purpose of U.S. conservation efforts was to insure the maximum sustained yield.¹³ The U.S. High Seas Policy is reproduced at the end of this chapter, 335-340.

Harvesting the maximum had also been the official policy during the war, when California sardines and the Alaskan salmon fishery had been under federal control. Both sardine and salmon stocks had suffered grievously as a result, but it remained an article of faith that the Americans conserved their resources, taking only as much as could be harvested each year without impairing the future vitality of the stocks. Some scientists, (such as the staff biologists working for the State of California) were concerned, but it is doubtful that Chapman was. He undoubtedly would have supported the federal biologists, who argued the stocks could withstand greater fishing intensity. Stocks fluctuated; the salmon and sardines would recover.

The high seas policy was also an extension of the 1936 response by Secretary of State Cordell Hull to the Japanese fishing proposal for Bristol Bay. In Hull's formulation, the U.S. had restrained its harvest for decades, limiting the catch, investing in hatcheries, and engaging in scientific research and in enforcement, giving the U.S. "a special claim in the ocean areas beyond three miles where the fishery was centered."¹⁴ Hull's political formulation had already

¹³ FAO, "Papers Presented at the International Technical Conference on the Conservation of the Living Resources of the Sea" (paper presented at the International Technical Conference on the Conservation of the Living Resources of the Sea, Rome, April 18 to May 10, 1955 1955).7.

¹⁴ Harry N. Scheiber, *Inter-Allied Conflicts and Ocean Law. 1945-53: The Occupation Command's Revival of Japanese Whaling and Marine Fisheries* (Taipei, Taiwan: Institute of European and American Studies, Academia Sinica, 2001), 15.

been used by the Americans in Japan. The American conserved their resources, while the Japanese did not. Now, with Chapman's interpretation, this political and moral position was merged into a scientific formulation that was backed by the force of the U.S. government.

The high seas policy as outlined by Chapman rested on an implied scientific formulation. Yet the critical document was not published in a refereed scientific journal, but rather in the Bulletin of the U.S. State Department. There are no formal references. The graph that supports the MSY theory (See Figure 1, 340) has no numerical scale on the axes—it is a theoretical construction with no quantitative dimension. And there is no quantitative evidence—indeed, there is no evidence at all—given to demonstrate or otherwise justify its actual relation to nature. It was, in short, just an idea, a concept without experimental or observational backing.

8.3 MSY and Conservation

Chapman was famous for the letters he wrote, always long, and often sent to multiple recipients. He kept in close contact with not only the fishing industry, but with scientific colleagues, including his mentor, W.F. Thompson; with Richard Van Cleve, who replaced him as director of the School of Fisheries in Seattle, and with a large number of other professional colleagues. But there is no surviving correspondence indicating that Chapman sought any scientific input

about what the goal of American fisheries policy ought to be, or how it should be achieved. It appears that he simply *assumed* that MSY must be right. As Chapman himself asked, how could anyone disagree with such a simple policy?

The idea of harvesting the maximum amount was the logical policy choice for scientists during the Progressive Era, when scientists such as Chapman received their training. Conservation meant utilization, mobilizing the fisheries to play their role in expanding the world food supply. Chapman also believed that fisheries science would soon have the ability to correctly estimate when stocks were reduced and regulations to slow fishing ought to be imposed. However, the mathematical formulas to establish MSY levels had not been published in late 1948, when Chapman formulated the policy. Scientists were certainly working on the mathematical formulas that sought to turn their knowledge of fish stocks into data that could be used to estimate, and to predict, how many fish could be caught. But the significant mathematical papers were not published until 1954, some five years later.

The first portion of the high seas policy justified the creation of the North Atlantic commission to regulate groundfish stocks. Chapman acknowledged that the growing technological capacity of modern fisheries had imperiled some stocks of fish and that in some cases fishing should be restricted, or, as Chapman put it, “smaller crops will have to be taken until the population recovers.”¹⁵ Even scientists who supported restricting fisheries only sought

¹⁵ Wilbert M. Chapman, “United States Policy on High Seas Fisheries.” Department of State Bulletin, Vol. XX, No. 498, Jan. 16, 1949, 67-80. 68.

moderate reductions; fish populations were generally seen as being able to support high levels of harvest, and to quickly recover from overfishing. Even though the runs periodically fluctuated or disappeared, the fish returned and fishing pressure resumed. And, as was increasingly the case after 1945, fishermen developed the capacity to follow fish and resume harvest pressure.

Still, Chapman argued that MSY was a tool of restraint, that it would be used to bring *down* the catches of overfished stocks in the North Atlantic. The policy does not include formal references, but Chapman did refer (although not by name) to the work of Michael Graham and W. F. Thompson. Chapman alluded to Graham's theory that unless fishing was regulated, it soon became unprofitable for fishermen, leading to greater expenditures to increase capacity, further eroding profits and taking too many fish.¹⁶ Chapman acknowledged Graham's analysis, saying that it was "the new concept that less fishing can in some cases provide more fish, and the apparent fact that, as the technology of catching improves, one after another of the major fishery resources of the sea stands in danger of overfishing and depletion."¹⁷ But Chapman dismissed Graham's concern, suggesting that as the intensity of fishing on a stock increased, the reproductive capacity of the fish population also increased, for reasons that scientists did not understand, perhaps because there was more food for the fish that were left, or because there was. He expressed the relationship in a logistics curve: (Illustration 6, 340).

¹⁶ Michael Graham, *The Fish Gate* (London: Faber and Faber Limited, 1943).

¹⁷ Wilbert M. Chapman, "United States Policy on High Seas Fisheries." Department of State Bulletin, Vol. XX, No. 498, Jan. 16, 1949, 67-80. 69.

The meaning of this curve is that for any particular population of fish there is an optimum point of fishing intensity which, if sustained, will yield the maximum crop of fish year after year. Less fishing is wasteful, for the surplus of fish dies from natural causes without benefit to mankind; more fishing is wasteful because it depletes the population and so results actually in a smaller crop.¹⁸

Chapman acknowledged that establishing the point of optimum fishing intensity was “difficult and expensive,” and that cyclical changes in the sea could have a great impact on stocks like herring and sardines, and lesser impact on fish like halibut where “it seems the natural fluctuations are small enough that they can be almost ignored.” But again, he brushed aside these concerns to focus on the “diplomatic difficulties that follow as a result of the new concept that less fishing can in some ways provide more fish and the apparent fact that, as the technology of catching improves, one after another of the major fishery resources of the sea stands in danger of overfishing and depletion.”¹⁹ In other words, he saw the apparent logical contradictions—the paradox—but in that paradox claimed the very beauty of the theory.

For Chapman, a key concept was that management was only necessary when fishing intensity passed the point of maximum return. As an example of how fisheries could be managed, he selected the International Pacific Halibut Commission, headed by his mentor, W. F. Thompson, and established by the governments of Canada and the U.S. in 1923, in an effort to reverse the decline of the halibut fishery. Thompson had based his

¹⁸Ibid, 68.

¹⁹ Ibid, 69.

recommendations to restrict the catch on scientific evidence. Halibut regulations had been designed to keep halibut at “that level of abundance that makes possible the maximum sustained yield from those populations year after year.”²⁰ But while halibut was widely regarded as the best managed American fishery, Chapman ignored evidence that the halibut season was steadily shrinking, as more and more boats entered the fishery and had to fish further offshore to maintain catches—evidence of Graham’s contention that restricting the catch to larger fish meant greater profit for fishermen.

While no empirical evidence was cited in the 1949 paper, Chapman used MSY to justify future scientific investigations—but only in the future, and only as needed. As the tuna fishery developed, MSY would guide the gathering of information to manage “when that proves to be necessary.” Intervention to restrict fishing could only be made with scientific evidence of depletion. Until then, fishing could proceed to expand, without interference from governments of other countries.

Throughout Chapman’s work, an over-riding concern is to avoid general international regulation, or, as Chapman saw it, international control over American fisheries. The three-mile limit was generally considered to be international law during the 1940s, as had been upheld by Britain for the last century, and was now being upheld by the U.S. Governmental power within three miles was sufficient to regulate fisheries once bilateral or multilateral

²⁰ Ibid, 69.

agreements had been reached by governments. To claim additional territory in the oceans was a step backwards. Chapman thought that all the nations of the world could agree that the high seas fisheries should be kept in a state where “a maximum crop can be harvested year after year.” But he acknowledged it would be impossible to agree on how the crop should be shared.

That part of the problem must be left, for the present, to free enterprise and competition. There is a crop to be taken in the international common. Each takes according to his ability. When the safe crop is taken, all stop the harvest.²¹

In short, the driving principle under Chapman’s conception of fisheries was a belief in, and a defense of, free markets. *Pacific Fisherman* summarized Chapman’s policy with a six-word headline: “No Sovereignty—Free Enterprise—Sustained Yield.” The approving article declared that the U.S. would not support policies that established ownership of the seas “by any nation—itsself included.”²² The oceans could—and would—be a free market, where American fishermen saw themselves as equal competitors. But their main competitors, the Japanese, were still fenced within the MacArthur Zone. The Latin Americans, who were scrambling to try to organize their own fisheries, were hardly fair competition.

Throughout his arguments for free fishing, Chapman claimed the mantle of conservation. The U.S. was scheduled to hold a conference with European nations in to reach a multi-lateral agreement establishing a commission that will have “the same beneficial effect in the northwest Atlantic as has been achieved

²¹ Ibid, 80.

²² *Pacific Fisherman*, January, 1949, 17.

in the Pacific.” As evidence of the halibut commission’s success, Chapman said that fishermen used to spend nine months of the year to catch 44 million pounds of fish. Now, the fleet could take 56 million pounds, and do it in less than two months of fishing. What Chapman did not mention was that the number of fishermen had also increased, lending weight to Graham’s argument that unless the fishery was regulated, the fishermen involved would ultimately make less money for the fish they caught. Chapman used the increased catch as evidence that the fish population was healthy and the halibut treaty a success.

While invoking the mantle of Thompson’s success, Chapman at the same time misrepresented his teacher’s key insight: that the fleet had to continually expand its fishing grounds as near-shore stocks were successively depleted. Thompson’s studies during the 1930s had provided Graham with evidence that his theory applied not only to the North Sea, but to Pacific fisheries as well.

8.4 MSY and the Role of Fishing in Fish Populations

In a statement prepared for the *Fishing Gazette* in 1949, Chapman expanded on the U.S. High Seas Policy. Congress was considering legislation to fulfill the U.S. obligations under the three new fishery conventions and a bill to support an international whaling convention had already been passed by the Senate. Chapman argued the treaties solved the industry’s problems. “Fishery

resources, being quickly replaceable by nature, are wasted if the annual crop which can be safely harvested from them is not taken. The fish mature, die, and are lost to the benefit of no one.”²³

But who, if anyone, owned the fish of the high seas? Chapman asserted they were owned by all until they became the property of the fisherman. Thus, there was no justification for a nation to tax the fishermen of another nation when they were fishing within international law and in compliance with conservation regulations.

So long as the resource is underfished there is room for more fishermen to fish and it would be morally as well as legally unjustifiable for a resource of the high seas to be fenced off and not fished to the full extent that is needed to produce the maximum sustained harvest from the resource. During the year the position of the United States has been made plain on this point.

Chapman asserted that fishing produced the conditions that allow the population to respond and produce the maximum number of fish on a sustained basis, year after year. In other words, human invention played an integral role in stabilizing fish populations. This human intervention also played a role in allowing the fish to gain maximum weight. In dense populations, fish were old and slow growing, resulting in a small annual crop. Thinning out the old population through intense fishing replaced the old, slow-growing fish with younger, fast-growing individuals, increasing the weight of the crop, just as thinning trees increased the yield in a forest.²⁴

²³ Wilbert M. Chapman. “Report on Activities with Respect to High Seas Fisheries, 1949.” NARA RG59 811.245/1-950, Box 4425.

Chapman asserted that the U.S. had not taken these actions to give its own fishermen preferential treatment. In fact, the U.S. was working energetically to provide technical advice and financial assistance to build up the fisheries of other nations. This was done in conjunction with the Food and Agricultural Organization of the U.N., through the Economic Cooperation Authority, sending fisheries missions to other countries and providing training opportunities in the U.S. for students from other countries to be trained in modern American fisheries science. Chapman implied that the Americans were altruistic and inspired by humanitarian goals. But the expansion of Western fishing technology was also good business. And far from being selfless, the U.S. crafted high seas policy and its scientific underpinning addressed American foreign policy goals on several fronts.

8. 5 Creating Fishery Commissions

Chapman acknowledged that some fisheries did need regulation, including the halibut, haddock, and cod in the Northwest Atlantic. The boats of almost a dozen countries were fishing for cod, haddock, and halibut in the Northwest Atlantic, off the coasts of New England, Newfoundland, Labrador, and Greenland. By 1948, with the number and capacity of boats expanding, it was urgent to come up with a regulatory mechanism that could control the catch.

Whereas others might have suggested global limits, Chapman, representing the

²⁴ Erik M. Poulson, "Conservation Problems in the Northwestern Atlantic," *Papers Presented at the International Technical Conference on the Conservation of the Living Resources of the Sea*, April 18 to May 10, 1955, Rome. (New York: United Nations Publications, 1956.) 183-191. 184.

U.S. State Department, argued only for fish-specific bilateral or multilateral agreements—in other words, as little regulation as possible. With the vast potential resources of the Pacific to exploit, Chapman didn't want European restrictions to be used to constrain other American fisheries.

Mesh regulations, which set the size of the openings in the nets to allow younger, smaller fish to escape unharmed, had been drawn up during the overfishing conference in April of 1946, applicable to a portion of the Atlantic and Arctic oceans.²⁵ The Canadians, who were watching helplessly as European boats increased their catch in the Western Atlantic, wanted restrictions. But the U.S. did not want to be subject to a European convention.²⁶ Instead, the Americans suggested there were actually two fishing areas in the North Atlantic that should be treated separately. The European convention delimited the western boundary of its convention area at 42 degrees west longitude.²⁷

In the High Seas Fisheries Policy of 1949, Chapman staked out the American preferred position, to avoid expanded territorial claims by regulating fisheries through the creation of bilateral or multilateral commissions. Commissions offered a way to organize scientific research, and put off the threat of territorial claims that threatened American fisheries. By 1949, the Americans had replaced the Japanese as the world's largest

²⁵ Ann Hollick, "The Roots of U.S. Fisheries Policy," *Ocean Development and International Law Journal* 5 (1), 1978, 63.

²⁶ Helen Rozwadowski, *The Sea Knows No Boundaries: A History of Marine Science Under ICES*. (Seattle: University of Washington Press, 2002), 108-9.

²⁷ Charles B. Selak, Jr. "Recent Developments in High Seas Fisheries Jurisdiction under the Presidential Proclamation of 1945." *American Journal of International Law*. 44 (4) 670-681, 677.

distant water fishing nation. American boats were fishing for cod, halibut, and haddock off Nova Scotia and Newfoundland, for tuna off Latin America, for shrimp off the Gulf of Mexico and into the waters as far south as Brazil, and for salmon and halibut off British Columbia and Alaska. The U.S. sought a policy that would legitimize its extensive network of fisheries, yet protect its most valuable fishery (Bristol Bay salmon) from other fishermen—in effect, to have their fish and eat them, too.

Representatives of eleven nations (Canada, Newfoundland, Denmark, Iceland, Italy, Portugal, Norway, Spain, Britain, and the U.S.) met in Washington, D.C., to work out a fisheries agreement. The International Convention for the Northwest Atlantic Fisheries (ICNAF) was signed Feb. 8, 1949, and went into effect on July 3, 1950.²⁸ Chapman got his wish: the Commission was initially designed only for investigation, with regulation if needed and agreed to by all parties. “Everybody was so sure that I could not get eleven countries to agree on anything that they had discounted anything happening,” Chapman wrote to Edward Allen in Seattle. “As a matter of fact I wouldn’t have bet you a plugged nickel on it myself.”²⁹ And the agreement was as minimal as possible, allowing the U.S. to veto any proposed restrictions that might hurt American fishing.

²⁸ Charles B. Selak, Jr. “Recent Developments in High Seas Fisheries Jurisdiction under the Presidential Proclamation of 1945.” *American Journal of International Law*. 44 (4) 670-681, 676.

²⁹ Chapman to Allen, Feb. 19, 1949. Papers of Edward Allen, University of Washington Special Collections.

The European scientists involved in ICNAF were also trying to deal with overfishing issues in the Northeast Atlantic, arguing about mesh sizes and areas where fishing would be restricted. But the goal of the new commission was announced by the U.S. before any scientific negotiations could begin, to harvest the maximum amount that the stocks could sustain. Graham's idea of implementing harvest restrictions to slow the catch and protect small fish, as scientists studied the impact of the gear and the restrictions on the stocks, was rejected. If there was discussion by scientists about the philosophy under which the Commission would work, it was not recorded in the ICNAF annual reports.

By moving to sign the multi-lateral agreements that created both the North Atlantic and the tuna commissions, the U.S. acted to forestall any discussion about an international commission with wider powers, perhaps the powers to rein in American fisheries. In particular, Chapman did not want the U.S. to come under the authority of the Food and Agricultural Organization of the United Nations, which the U.S. had been instrumental in creating in 1945. There had been different viewpoints about FAO. One group wanted a strong and activist organization that could foster economic expansion and prevent food crises in the future. The second wanted an organization that would be limited to fact-finding and providing analysis, "which would be carefully insulated from positive action."³⁰ Not surprisingly, Americans were in the latter camp. While they had supported the formation of the FAO, they wanted to limit its power to an advisory role.

³⁰ Gove Hambidge, *The Story of FAO*, (New York: D. Van Nostrand Co., 1955), 53.

In the high seas fishing policy, Chapman had used the International Pacific Halibut Commission as the standard for how fishery commissions ought to operate. While the halibut commission has a long record of successful management, it is unusual in that it deals with only one species of fish. Most fishery agreements involve multiple species, often caught by different types of gear. Even the tuna treaty dealt with five different species of tuna. Applying the lessons of one fish to the management of many would create its own series of scientific difficulties. And the American model of how fisheries ought to be managed created an additional set of complications when the process was applied to Japan.

MSY was an extremely flexible concept that would be applied in many different situations. Chapman used it to justify creating fishing restrictions in the North Atlantic, and to frame the research plan of the newly-created tuna commission. But Chapman also used MSY in the struggle between the Japanese and the American fishing industries, especially with regard to Bristol Bay. Chapman was preparing to argue that when a fishery was being fished at MSY levels, that justified denying entry to the fishery by the boats of other nations. Chapman argued that the Bristol Bay halibut and salmon fisheries were “mature”, and were being fished at MSY levels, as a justification to bar entry to the Japanese. It was enclosure, but it was selective enclosure (only aimed against the Japanese), and it was justified for conservation reasons, and justified by the newly adopted U.S. high seas policy.

It was also an extension of Cordell Hull's 1936 political formulation. It repeated the idea that the American had sacrificed to conserve Bristol Bay runs. Americans deserved to be rewarded for their forbearance in managing the runs so conservatively. It reiterated that America led the world in conservation efforts, and that science justified the exclusion of other fishermen to maintain the health of the stocks. This scientific sheen helped strengthen Chapman's hand in the next battle, which was within the State Department itself over the details of post-war policy with Japan. Fishing was thorny issue that had the potential to derail the entire peace process.

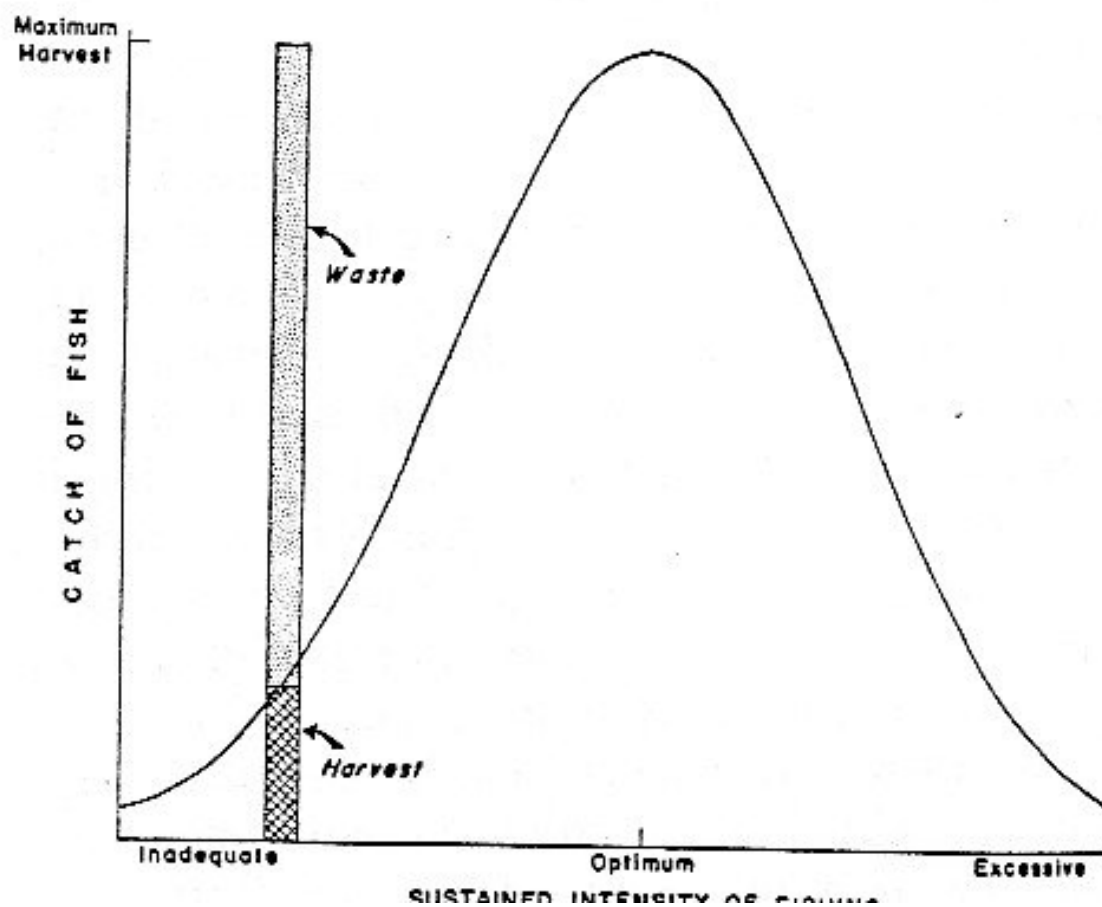


Illustration 6, Maximum Sustained Yield curve, ("U.S. High Seas Policy,"

Department of State Bulletin XX, Jan. 16, 1949, 69.

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Selak, Charles B. Jr. "Recent Developments in High Seas Fisheries Jurisdiction under the Presidential Proclamation of 1945." *American Journal of International Law* 44, no. 4 (1950): 670-81.

Chapter Nine

Fish and the Japanese Peace Treaty

Peace between the two countries was clearly linked to peace in the fisheries.

Roy Jackson and William Royce.¹

In October of 1949, the Supreme Commander Allied Powers asked the State Department for permission to begin discussions with the Japanese about a fisheries treaty. The State Department refused, because it did not yet have a policy on what to do about Japanese fishing. On one hand, the internationalists believed that the Potsdam Conference had guaranteed Japan access to raw materials it had utilized before the war, and that obviously included fish. With China's fall to Communism, it was vital to support the recovery of the Japanese economy. It was U.S. policy to uphold the freedom of the seas, and the right of passage and of fishing on the high seas for all countries, not just the U.S.; if that meant the Japanese would fish in Alaskan waters, so be it. But Wilbert Chapman had drawn a line in the ocean, he would keep the Japanese off Bristol Bay sockeye. Unless the Alaskan salmon were enclosed from the Japanese, Chapman repeatedly warned a peace treaty would not get through the Senate. The battle that had been brewing since 1936, when the Japanese first suggested a scientific investigation of the Bristol Bay salmon resource, was coming to a head. But more was involved than salmon; this time, the fate of the American

¹ Roy I Jackson and William F. Royce. *Ocean Forum, an Interpretive History of the International North Pacific Fisheries Commission* (Farnham, Surrey: Fishing News Books, Ltd., 1986), 25.

tuna fishery and the processing industry of Southern California, was also roped into the controversy. The impact of foreign policy decisions was about to start playing out at home, along the East and West coasts in the fishing communities.

Both countries were eager for the Occupation to end. By 1949, the U.S. Army was still financing food relief shipments of between \$350 million and \$400 million a year for Japan.² Occupation costs were some \$900 million a year, fully a quarter of the Japanese budget. The economy was heavily dependent on exports, but raw materials were scarce and manufacturing slow to recover. Former enemies, despite U.S. efforts, refused to grant formal most-favored-nation treatment to Japan.³ The profits from textile exports were not enough to cover food, fuel, and industrial materials, factors which drove up Japanese costs and hindered recovery. Both sides wanted a treaty, but there were multiple obstacles, in addition to fish.

During 1949, Chapman circulated two draft treaties dealing with fisheries. One proposed to cover the fishing activities of the U.S., Canada, and Japan, while the second included the Soviet Union. Both called for the U.S., Canada, Japan, and the Soviet Union to agree not to fish within 150 miles of each other's coasts for a fifteen-year period. On the face of it, this seemed reasonable, but

² Michael Schaller, *The American Occupation of Japan: The Origins of the Cold War in Asia* (New York and Oxford; Oxford University Press, 1985), 82.

³ Robert A. Fearey, *The Occupation of Japan, Second Phase: 1948-1950* (New York: The MacMillan Company, 1950), 139.

there was little chance of American boats crossing the Pacific to fish in the already well-harvested waters off Japan and the Soviet Union. The ploy was designed to keep the Japanese out of Bristol Bay.

The International Relations section of the State Department did not approve of the drafts. "Despite the preamble to these conventions, they do not actually provide for conservation of fisheries," a State Department official wrote to Chapman on Aug. 3, 1949. "The most they can be said to do in this direction is to facilitate the enforcement of fishing measures provided through other instruments." The official also complained that the treaties erected barriers to the access to fish, barriers that were contrary to the objectives of American foreign policy, as well as to the Atlantic Charter and the Potsdam Declaration.⁴

SCAP also objected to the two drafts, noting the asymmetry of the treaties. "Thus Japan apparently is being asked to concede real fishing rights while the United States and Canada would be giving up only theoretical rights," one military analyst noted.⁵ SCAP disapproved of a treaty being forced on Japan, and any provision that would seriously affect SCAP's attempts to make Japan more self sufficient. With the pressure to find Japanese products to export to the U.S. market, and reduce the costs of the Occupation, SCAP moved on Sept. 19, 1949, to greatly expand the Japanese fishing zone, increasing the area in the central Pacific eastward to 180 degrees East Longitude. The regulations widened

⁴ Martin to Chapman, Aug. 3, 1949, Files of the Columbia River Maritime Museum.

⁵ Memo, to Adjutant General, Department of the Navy, Sept. 15, 1949, Files of Columbia River Maritime Museum.

the tuna grounds, and permitted boats to sail within three miles (rather than twelve) off the coasts, a deliberate challenge to the twelve-mile limit the Soviet Union was claiming.⁶

Chapman proposed that the State Department have Japan follow American policy with regard to fisheries conservation, which meant that Japan would formally adopt the American policy of Maximum Sustained Yield. Chapman laid out demands: that a peace treaty include a provision that Japan would adhere to the International Convention for the Regulation of Whaling, and that Japan would abide by American regulations with regard to conservation agreements. While Japan theoretically would have the right to enter the international waters of Bristol Bay, if they actually did so, there would be “a storm of reaction from Alaska and the west coast states such that the United States would unquestionably take whatever action might be necessary to force Japanese vessels from such areas.”⁷ Chapman’s goal of preserving American fish for American fishermen was about to collide with the result of SCAP’s massive rebuilding program of the Japanese fishing fleet.

SCAP’s fishery policy during the Occupation had been the same as American military policy in the sardine and salmon fisheries, fishing to the maximum, pushing the stocks to produce much-needed protein. The humanitarian situation for the Japanese people had been dire after the war, and providing food had been one of SCAP’s highest priorities. But now the policy, in

⁶Weissberg Guenter, *Recent Developments in the Law of the Sea and the Japanese-Korean Fishery Dispute* (The Hague: Martinus Nijhoff, 1966), 7.

⁷Memo, Chapman to Colonel E.W. Hendrick, Nov. 8, 1949. NARA RG 331, Box 8866.

conjunction with the massive expansion of fishing capacity, was straining stocks within the MacArthur Zone, where Japanese fishing was confined. SCAP placed the blame on the Japanese fishing industry.

9.1 Japan and the Fisheries Treaty

Japan was wary of entering any agreement to forego fishing that might be used as a precedent by the Soviet Union, Korea, or China with regard to the waters of the eastern Pacific. “This matter is very critical to Japan,” Herrington wrote to Chapman on April 3, 1950. He went on to say that a SCAP study showed the government’s fishery inspection system, which had finally been financed, was ineffectual and that the government was not taking sufficient action to reduce the number of boats working in the East China Sea. Herrington said the two “controlled expeditions” for tuna into the Trust Territories had been a carrot to prod the Japanese government into supporting the reduction in the size of the East China Sea fleet.⁸

While Herrington pressed for an American delegation to come to Tokyo for talks, Chapman replied on April 11, 1949, that there couldn’t be a State Department delegation because there was no agreement on the policy. The International Trade Policy group objected to Chapman’s proposed 150-mile treaty as a departure from international trade policy. The Far Eastern Group, which had initially supported the draft treaties, reversed itself and was concerned

⁸ Herrington to Chapman, April 3, 1950, Carton 3D. William Herrington Papers, University of California, Berkeley School of Law.

about precedents for neighboring countries. Chapman was adamant that Japan had to be excluded from the Alaska salmon and halibut fisheries, or a peace treaty would not make it through the Senate:

The first Jap vessel that catches a salmon bound for Alaskan water gets us automatically in hot water in Latin America, both in our tuna and shrimp fisheries, the entire Northwest Atlantic area and particularly in the Nova Scotia and Gulf of St. Lawrence parts of that area, and in Hecate Straits...In my humble opinion a general treaty of peace which does not settle the fishery questions will have rough sledding getting ratification in the U.S. Senate.⁹

Chapman meant that the issue of territorial claims and protests against American fishing would be resurrected by expanded Japanese fishing. He claimed that access to the Trust Territories was his only bargaining point in keeping the Japanese out of Alaska. "I now have no intention of signing my initials to any part of a southern expansion until I can see some initials on the bottom of a general fisheries policy with respect to Japan that I can agree to."¹⁰ The State Department was now at odds with itself over fish, and the issue of the peace treaty drifted.

The dispute over what to do about fishing centered on the tension between the cornerstone foreign policy objective (maintaining the freedom of the seas) and a powerful domestic lobby. Neither side was powerful enough to prevail. In a March 6, 1950, memo to Chapman, the International Trade Policy group repeated its objections to the draft treaties, as being inconsistent with foreign economic policies, including the recently signed General Agreement on

⁹ Chapman to Herrington, April 11, 1950, Carton 3D. William Herrington papers, University of California, Berkeley School of Law.

¹⁰ Ibid.

Tariffs and Trade. The group also objected to the draft treaties being sent to Japan, despite not having reached agreement within the State Department. The ITP group requested that further discussions be halted.¹¹

Chapman replied that ITP did not clearly understand the purposes of the treaties. He argued that the salmon and halibut fisheries in the Gulf of Alaska were “fully mature,” and could not be expanded to accommodate more fishermen. The fisheries were severely regulated to prevent the destruction of the runs, which would have happened had the Japanese been allowed to expand into the fishery during 1937. The direct result of the Japanese threat had been the Truman Proclamation of 1945, “issued to provide a legal basis for the exclusion of the Japanese from the Bristol Bay fisheries.”¹² The Proclamation had unfortunately been misconstrued by a number of Latin American nations.

It should be understood that the real purpose of the Latin American decrees, declarations, etc., is to establish a basis for taxation of United States tuna fishing vessels which operate on the high seas off the coast of those countries, and that they have nothing to do with conservation.¹³

In other words, American goals were altruistic; the Latin Americans were selfish. The Americans conserved their resources; the Japanese were only interested in harvesting as much as they could, at the risk of damaging the runs, and the Latin Americans only wanted to tax American boats. On the one hand, Chapman’s

¹¹ Brown to Chapman, March 6, 1950, Box 27, Folder “Fishing Industry Advisors.” Edward Allen Papers, University of Washington Special Collections.

¹² Chapman to Brown, March 8, 1950, Box 27, Folder “Fishing Industry Advisors.” Papers of Edward Allen, University of Washington Special Collections.

¹³ Chapman to Brown, March 8, 1950, Box 27, Folder “Fishing Industry Advisors.” Papers of Edward Allen, University of Washington Special Collections.

stance can be dismissed as hypocritical, or another example of American exceptionalism. But this ignores Chapman's deep understanding of the fishing industry, with all of its complexity, frustrations, and chaos. He saw himself as the champion of American fisheries, fighting for the very right of the fleet to continue to exist. He also was the champion of the fish, or at least the Bristol Bay sockeye, which he believed would certainly be at risk if any offshore fishery began.

Chapman believed he was firmly in the camp of conserving fish resources. MSY meant conservation, not to harvest more than the runs could sustain. The policy was grounded in American science, and Chapman, throughout his career, never lost an opportunity to tell politicians and the industry how much they needed good research and science to make management effective. But Chapman's view of conservation was also rooted in the Progressive Era ideal of utilization. Science would determine when fisheries ought to be regulated. Any declines in American fisheries were temporary, the stocks were resilient, and would recover. For Chapman, the idea of American conservation of the stocks was an ideology that was never questioned, despite evidence to the contrary.

The policy of the U.S. was to recognize the right of a state to protect and conserve a fishery in which it had a substantial interest in the high seas, contiguous to the territory of the state, provided that regulations were adopted jointly with other states that might also have an interest in the fishery. Thus, the U.S. could not acquiesce in having its tuna boats excluded from fishing on the

high seas contiguous to Latin America, or having them subjected to fees, just because the contiguous states unilaterally chose to extend sovereignty beyond three miles. Chapman explained anything that was done to prevent the Japanese from fishing on Bristol Bay salmon and halibut would be used by the Latin Americans against American tuna fishermen.

The intent of the 150-mile exclusion zone in the draft treaties was for the U.S. and Canada to stay out of Japanese fisheries for fifteen years, in return for the Japanese not fishing off Alaska and British Columbia. The fifteen-year span would allow anti-Japanese feeling to subside on the West Coast, and “permit the Japanese to demonstrate that they have changed their ways with respect to conservation of marine resources. In the meantime, it would allow for development of fishery research programs on the West Coast of North America, from Alaska to Costa Rica.”¹⁴ Chapman concluded by saying that his office had been established to find a solution to this key problem, and that the stalemate in the State Department was turning into an obstacle to reaching a peace treaty with Japan. The costs of the Occupation continued to mount and there was enormous frustration on both sides.

9.2 The Japanese Fisheries Crisis

By early 1951, SCAP was forced to acknowledge that the Japanese coastal fisheries were in crisis. The catch was almost up to pre-war levels, but

¹⁴ Chapman to Brown, March 8, 1950, Box 27, Folder, “Fishing Industry Advisors.” Papers of Edward Allen, University of Washington Special Collections.

there had been a 40 percent increase in the number of fishermen. With the removal of price controls on food in the spring of 1950, the price of fish plummeted. Operating costs had increased, and coastal fishermen were unable to pay off old loans or get credit to finance further operations. "Coastal fishermen in most areas now are facing financial collapse," SCAP reported. "If this situation is allowed to continue, it will make necessary great outlays of relief funds; serious declines in production will be incurred; and it will seriously threaten the success of the orderly fishery reforms which are now progressing favorably."¹⁵ SCAP's Natural Resource Section offered a five-point plan: a halt to further expansion in over-exploited fisheries, development of sound conservation regulations, more government enforcement, an increase in profits for fishermen, and establishing a sound financing program.

SCAP and William Herrington were at their wits' end, as they tried to exercise control over the fishing industry. The carrot of the two experimental expeditions to the Trust Territories in 1949 to catch tuna for the American market had not gone well, despite (or perhaps because of) heavy American control. The catch was considered poor in relation to the cost of the operation. Bad weather had interfered with the transfer of fish from the catcher boats to the mothership. The lack of refrigeration on the catcher boats made it impossible to keep the tuna in prime condition until they could be transferred to the mothership. The operators made no attempt to increase efficiency because

¹⁵ *Commercial Fisheries Review*, April, 1951, 59-60.

labor was so cheap. Workers were on call twenty-four hours a day, and by the end of the voyage, the cumulative stress of hard labor, inadequate rest, and poor pay had left the workers exhausted and demoralized.¹⁶

By July of 1950, SCAP reported that the Japanese government had passed a law to prevent the exhaustion of marine resources. It had also ordered the East China fleet to be reduced to 247 vessels, from the current 296. A patrol system was now operating and there were plans to expand it, in hopes of reducing the seizures by Korea, China, and the Soviet Union. The information was classified as secret, but the State Department suggested it was time for Chapman to share this information about the patrol system with the U.S. fishing industry, “on a confidential, informal basis...it would go far in dispelling the doubts which that industry entertains concerning Japanese conservation practices.”¹⁷ The continued seizures fueled the perception that the Japanese refused to obey fishing regulations, arousing suspicions about the role of Japanese fishing in the region after the Japanese Peace Treaty was signed. If the Japanese refused to obey the SCAP fishing boundaries, what would happen when a peace treaty was signed and there were no restrictions on where they could fish?

While there may have been some token reductions of licenses in the East China Sea fleet, the overall capacity of the Japanese fisheries under SCAP had

¹⁶ Bell M. Shimada, “Japanese Tuna-Mothership Operations in the Western Equatorial Pacific Ocean,” *Commercial Fisheries Review*, June, 1951, 1-25, 2.

¹⁷ Department of State to the Acting U.S. Political Advisor for Japan, July 21, 1950, Box 8875, Folder, “Fishing Area Extensions.” NARA RG 331.

increased to an estimated 70 percent greater capacity than in 1939. The industry continued to press for greater allocations of fuel and materials, all of which had to be imported and paid for by the U.S., as part of the rehabilitation of the Japanese economy. But while more resources were being poured into the fisheries, overall production had not increased, generating more calls for fuel and material, and continued pressure to expand the fishing area. For the strapped Japanese government, there was no good solution.

The Japan Federation of Industries wanted an expansion in the East China Sea. The petition said that despite a reduction in boats, there had been no improvements in catches. Coupled with a decline in prices after the lifting of price controls, and an increase in gear costs, the federation said some 200,000 people were dependent on the fishery.¹⁸ Pressure to expand fishing to the northern Pacific Ocean came from the Northern Pacific Ocean Fisherman's Association, which petitioned for permission to mount a canned salmon, salted salmon, and crab processing operation in the northern Pacific. There had been 76,500 fishermen and their families dependent on the Northern fishery before the war. "There is only one possibility of employment and that is for them to be allowed to go back into that area again."¹⁹

¹⁸ Opinion concerning the Expansion of the Fishing Area in the East China Sea formulated by the Japan Federation of Industries on Oct. 3, 1950, Box 8875, Folder, "Fishing Area Extensions." NARA, RG 331.

¹⁹ Petition for the Extension of Fishing Waters in Northern Pacific Ocean for Experienced Unemployed Japanese Fishermen." Oct. 20, 1950. Box 8875, Folder "Fishing Area Extensions." NARA, RG 331.

By July of 1950, cans of Japanese tuna were entering the U.S. market at \$10.85 a case, compared to \$13 for West Coast tuna. Japanese light meat tuna was selling in supermarkets for 29 cents a can, compared to American advertised brands selling for between 35 to 39 cents a can.²⁰ Even more ominous was the price of tuna packed in brine, which entered the U.S. at a 12 ½ percent tariff, rather than the 22 ½ percent for tuna packed in oil; brined tuna fish, a lower-quality product, sold at \$8.60 a case.²¹ The displacement of American tuna from supermarket shelves had begun.

In September of 1951, the *Commercial Fisheries Review* reported that large Japanese fishing companies would only guarantee a minimum monthly wage of 5,000 to 6,000 yen, about \$13.90 to \$16.40 in American dollars. Fishermen averaged well over 10,000 yen (U.S. 27.78) per month in 1947 even though the company received 60 percent of the value of the catch and the fishermen 40 percent.²² Cheap labor was a substantial advantage that American processing companies could not match.

“There is every indication that the Japanese tuna pack will continue to expand and that they can meet the increased tariff rates if they have to,”

²⁰ *Pacific Fisherman*, July, 1950, 40.

²¹ *Pacific Fisherman*, June, 1950, 17.

²² *Commercial Fisheries Review*, September, 1951, 29-30.

Herrington wrote to Chapman on Aug. 30, 1950. "If the U.S. wishes to limit imports, it will have to take direct action."²³ Herrington also wrote that SCAP staff was being reduced and that he would be returning to the U.S. in September.

By April, the Japanese government was forced to take further steps to reduce the fleet. The Japanese Fisheries Agency announced a plan to withdraw approximately 17,100 of the 35,000 trawlers working in coastal waters. No new trawlers would be licensed. An indemnification program was also announced for the 500,000 people, including family members, who would be displaced by the fleet reduction. The fisheries agency suspended fishing in the East China and Japan Seas by some 800 additional trawlers because of the levels of violations of the MacArthur Line.²⁴

The Soviets, the Chinese, the Koreans, the Philippines, and the Indians—all the neighbors-- opposed any expansion of Japanese fishing territory. There was concern over the question of security and allowing the Japanese to enter territorial waters.²⁵ If the Japanese returned, it would retard the development of fisheries within the adjacent countries, and all the countries were eager to fish for themselves.

²³ Herrington to Chapman, Aug. 30, 1950, Carton 3D. William Herrington papers, University of California, Berkeley School of Law.

²⁴ *Commercial Fisheries Review*, June, 1951, 69-72.

²⁵ Far Eastern Commission and Japanese Fishing Areas, Nov. 7, 1950. Box 8875, Folder, "Fishing Area Extensions." NARA, RG 331.

9.3 The American Fisheries Crisis

By June of 1951, the fish quandary was becoming acute for the Americans as well. Fishermen and processors in New England and Southern California were unhappy about the rising amounts of imported fillets and tuna. The State Department was still stalled in coming to a position on the Japanese treaty. The previous April, the Mexican government had arrested five Texas shrimp vessels for fishing in the Gulf of Mexico. European boats were fishing on the Grand Banks of Newfoundland and landing at New England ports. "These issues are too important to lose or ignore," Chapman wrote.²⁶

The situation escalated again in June of 1950, when the Mexican government announced it would abrogate its 1943 trade agreement with the U.S. There was a six-month delay for the trade agreement to be nullified, when the tariff on tuna canned in oil would go back to 45 percent. Seizing the opportunity, the Japanese escalated their imports into the U.S. Imported tuna had totaled 4.5 million pounds; by 1950, that had increased to 35.4 million pounds.²⁷ The imports also included two newer products, tuna canned in brine, and fresh tuna. Tuna canned in brine was imported at a 12.5 percent tariff rate, thanks to a GATT agreement that had been signed in 1943 with Iceland. Tuna are not caught off Iceland, but tuna canned in brine were placed in what was called a basket

²⁶ Chapman Memorandum, June 8, 1950, Box 27, Folder "Fishing Industry Advisors." Edward Allen papers, University of Washington Special Collections.

²⁷ Statement of Harold C. Cary, December, 1954, Box 18, Folder, "Committee on Reciprocity Information." Files of the American Tuna Association, Scripps Institution of Oceanography.

category and assigned a tariff of 12.5 percent.²⁸ The Japanese exploited the loophole to sharply escalate its exports of tuna canned in brine. They also sharply increased exports of frozen and fresh tuna to the U.S. There was no tariff governing these new products; fresh tuna hadn't existed as a commodity when the previous tariff agreements were negotiated, and frozen tuna had made up a small part of the imports. By 1951, there were four different kinds of tuna products imported into the U.S., with three different tariff structures. And almost all the tuna coming into the country was cheaper than tuna caught by American boats and canned at Southern California canneries. In San Diego and San Pedro, the canneries were idled, the workers unemployed, the boats tied to the dock.²⁹

9.4 John Foster Dulles and the Peace Treaty

In April of 1950, President Truman appointed John Foster Dulles (1888-1959) as assistant to Secretary of State Dean Acheson, with responsibility to negotiate a Japanese peace treaty. Two months later, the North Korean Army crossed the 38th parallel and the Korean War began.³⁰ The strategic importance of Japan was more vital than ever, and the U.S. government accelerated its involvement in expanding the Japanese economy.

²⁸ U.S. Tariff Commission Testimony, June 26, 1952. Box 18, Folder "Committee on Reciprocity Information. Files of the American Tuna Association, Scripps Institution of Oceanography.

²⁹ The ATA before the U.S. Tariff Commission, June 26, 1952. Box 18, Folder "U.S. Tariff Commission. American Tuna Association files, Scripps Institution of Oceanography.

³⁰ Walter LaFeber, *The Clash: U.S.-Japanese Relations Through History* (London: W. W. Norton & Company, 1997), 284.

Within two months of his appointment, Dulles had assembled a small staff and begun work on the American objectives for the peace treaty. The overall goals were that the Japanese should be peaceful, should respect fundamental human rights, be part of the free world and friendly with the U.S. Japan should develop self-respect by avoiding dependence on outside charity, and it should demonstrate to the rest of Asia the benefits of the free world, helping to resist communism. Its proximity to the Soviet Union and Communist China made Japan vulnerable to communist intrigue and subversion. The policy recognized that there were natural and historic economic ties with the countries in the region, such as the USSR and Communist China. A key concern was that Japan be able to find the raw materials it needed, without having to trade with the adjacent communist countries.³¹

The start of the Korean War had changed the dynamics of the Japanese-American relationship. Prime Minister Shigeru Yoshida believed that Japan's strategic importance to America had risen quickly after the North Korean attack on the South and he tried to use Japan's elevated status to strengthen his negotiating position with America.³² With the start of the war, the U.S. began to place extensive orders with Japanese companies, for ammunition, trucks, uniforms, communications equipment, and other products needed for the war effort. The U.S. also began buying fertilizers and consumer goods for other South

³¹ Seigen Miyasato, "John Foster Dulles and the Peace Settlement with Japan." *John Foster Dulles and the Diplomacy of the Cold War*. Richard H. Immerman, ed. Princeton University Press, 1990, 191-212.

³² Michael M. Yoshida, *Japan and the San Francisco Peace Settlement* (New York: Columbia University Press, 1983), 45.

and Southeast Asian noncommunist countries as part of the American foreign aid effort. During the four years that followed the outbreak of the War, the U.S. spent some \$2.37 billion buying special procurements from the Japanese.³³

In early 1950, SCAP had opened discussion with the Japanese government over fisheries issues, despite the lack of resolution within the State Department. The official Japanese position on the high seas was presented to SCAP on March 20, 1950, by the Ministry of Foreign Affairs. The statement opened with a declaration of how important the high seas fisheries were to the future of Japan. Fishing was an essential basic industry. The statement laid out six general principles for a fisheries treaty: (1) that Japan would accept a multilateral agreement with Canada and the U.S.; (2) it was ready to seek, with the U.S., a formula that would not set prejudicial precedents on other Japanese high seas fisheries; (3) Japan would continue to honor its 1938 agreement not to fish in Bristol Bay; (4) it wanted full access to fisheries in the former Mandated Islands and other former possessions; (5) Japan would support the International Whaling Commission and join other international agreements for halibut and tuna research; and (6) Japan proposed that any agreement run for five years, after which any contracting party could terminate it.³⁴

It was a strong set of demands, reflecting not only the importance of fishing to the overall Japanese economy, but the new position of Japan in terms

³³Chalmers Johnson, *MITI and the Japanese Miracle, The Growth of Industrial Policy, 1925-1975*. (Stanford: Stanford University Press, 1982), 227.

³⁴Harry N. Scheiber, "Origins of the Abstention Doctrine in Ocean Law: Japanese-U.S. Relations and the Pacific Fisheries, 1937-1958," *Ecology Law Quarterly* 16 (1989), 53.

of its importance to the overall American position in the North Pacific. On one hand, Japan was dealing from a position of defeat. On the other hand, the Korean War highlighted Japan's strategic importance to the U.S. For some time, SCAP had pushed for the Japanese to return to the waters of the Trust Territories, to catch tuna for the American market. It didn't matter that the initial two mothership operations had not been financially successful, as long as the American tuna market was open to Japanese products. There was sufficient cheap Japanese labor to ensure that Japanese fish would undercut the American product, at least until the Japanese could fish long enough to improve the efficiency of the mothership operations and make them profitable. With the economics of the motherships straightened out, the Japanese would be able to continue to undercut American tuna.

Dulles made his first negotiating trip to Japan in January of 1951.³⁵ His paramount objective was to align Japan with the United States against the Soviet Union and he did not want a squabble over fish to bog down the negotiations on an overall peace treaty.³⁶ He asked Chapman to work on a letter that Dulles could present to Prime Minister Yoshida, as the basis for an agreement on fisheries. Chapman went back to the 1938 language in which Japan had agreed to keep its fisheries out of Bristol Bay and fashioned a document that Dulles took with him to Tokyo.

³⁵ Telegram from Thomas Sandoz to Rep. Wayne Morse, Jan. 12, 1951, Box 12, Folder 27. Wilbert M. Chapman papers, University of Washington.

³⁶ Harry N. Harry N. Scheiber, "Origins of the Abstention Doctrine in Ocean Law: Japanese-U.S. Relations and the Pacific Fisheries, 1937-1958," *Ecology Law Quarterly* 16 (1989). *Ecology Law Quarterly* 16 (1989). 60.

Chapman's draft became the basis for an exchange of letters between Yoshida and Dulles, agreeing to remove fisheries from the main treaty negotiations. In a letter dated Feb. 7, 1951, Dulles wrote that the Americans recognized the Japanese depended on fish for their food supply, and they thus had a special interest in the "conservation and development of fisheries."³⁷ After full sovereignty was restored, Japan would enter into negotiations to establish fisheries treaties. Again, the emphasis was on volunteerism. This voluntary act did not imply a waiver of international rights or prohibit Japanese fishermen from fisheries in which they were currently engaged.

In return, Yoshida wrote that Japan recognized that high seas fisheries could exhaust resources unless there was concerted action for conservation and development of fisheries. The government was aware that certain countries had adopted "international agreements and voluntary self denying ordinances to prevent exhaustion of high seas fisheries which are readily accessible to fishermen of their own country and that if these conserved fisheries were to be subject to uncontrolled fishing from other countries, the result would be international friction and the exhaustion of the fisheries themselves." Japan would enter into negotiations in the future, and in the meantime, without waiving its international rights, would prohibit its fishermen from operating "in presently conserved fisheries."³⁸ Japan was officially recognizing the American claim that they had conserved salmon stocks.

³⁷ Department of State Bulletin, Vol. XXIV, No. 608, 351-352.

³⁸ Ibid.

In a March 5, 1951 letter, Chapman explained that the State Department had not reconciled its different views on what to do with the Japanese fisheries, but that Dulles had made a decision, based on language that Chapman had drafted. "What he decided was that he had to eliminate the fishery problem from the general problems of the Treaty of Peace or he was likely to get tangled up in such a fishery snarl both at home and with our Pacific allies that the conclusion of the Treaty of Peace would be delayed longer than was in the best interest of the United States."³⁹

Over the next several months, Japan and the U.S. continued to exchange peace treaty drafts and comments. The West Coast fishing industry pushed to begin negotiations on a fisheries treaty. Washington Senator Warren Magnuson traveled to Japan in April of 1951, urging that the general peace treaty contain a provision committing Japan to concluding a fisheries agreement.⁴⁰

By spring, Chapman had decided to leave the State Department and go to work as Director of Research for the San Diego-based American Tuna Association. In April, William Herrington left SCAP and returned to Washington, D.C., where he was scheduled to replace Chapman in the fisheries advisor position in the State Department.

Herrington gave a speech on April 9, 1951, at the National Fisheries Institute, on Japanese tuna fisheries. Japan was heavily dependent on fishing,

³⁹ Chapman to Montgomery Phister, March 5, 1951, Carton 3D, William Herrington papers, University of California Berkeley School of Law.

⁴⁰ Chapman to Herrington, May 1, 1951, Carton 3D, William Herrington papers, University of California, Berkeley School of Law.

Herrington told the group, but there were between 250,000 and 500,000 too many fishermen, who so divided the catch that coastal fisheries faced collapse. The solution to at least some of these problems was to expand fishing for products that could be exported to the U.S. Herrington estimated there were 1,000 boats of more than 20 tons engaged in high seas fishing for tuna and that it was certain the fleet would increase as fishing territory was expanded. If the U.S. tariff on tuna was increased to 22.5 percent, Herrington thought it would cause a temporary drop in exports, but that the Japanese industry would absorb the costs through lowering prices to fishermen and increasing cannery efficiency. "Before the end of 1951, it is likely the volume of Japanese exports will return to, if not exceed, that of 1950," Herrington warned.⁴¹ It was not a message that the fishing industry welcomed.

Herrington outlined the dilemma for American tuna fishermen and processors. Without the protection offered by tariffs, "there is very little doubt that the United States tuna fishery would greatly decline, if not practically disappear." Yet tariff protection for a domestic industry flew in the face of a national policy of reducing tariffs to increase trade, "and remember there is plenty of evidence that most people believe this policy is in the overall national interest."⁴² Fishing policy was increasingly on a collision course with American foreign policy concerns.

⁴¹ *Commercial Fisheries Review*, May, 1951, 1-5.

⁴² *Commercial Fisheries Review*, May, 1951, 5.

9.5 Signing the Peace Treaty

The Conference for the Conclusion and Signature of the Treaty of Peace with Japan took place in San Francisco from Sept. 4 to 8, 1951. Article 9 called for Japan promptly to begin negotiations with the Allied Powers for the conclusion of agreements providing for the regulation or limitation of fishing and the conservation and development of fisheries on the high seas. In his remarks at the start of the conference, Dulles said the present wording did not set any limitations on Japanese fishing activities in the Southeast Asian and Pacific waters. Therefore, there was no basis in the treaty for future bilateral or multilateral agreements. "This omission is to be regretted. Here one will have to depend largely upon Japan's willingness to arrive at a fair agreement in which there is sufficient scope for all nations concerned to develop their fishing industries in accordance with their economic needs."⁴³

In his analysis of the signing of the peace treaty, Michael M. Yoshitsu argued that Japan prepared for the peace settlement by stitching together, as best it could, a series of accords designed to protect its strategic interests, yet win U.S. support. The U.S. favored independence for Japan, but in line with American strategic objectives in the Far East. Yoshitsu wrote that Tokyo officials grudgingly accepted the terms of the treaty because they had no choice, since opposition could endanger the treaty and unravel the new relationship with the Americans. "As a result, Japanese leaders signed a series of agreements riddled

⁴³ Conference for the Conclusion and Signature of the Treaty of Peace with Japan, Record of Proceedings, Department of State Bulletin, 197.

with inequality. In their view, a peace treaty falling outside the United Nations Charter, a security treaty omitting mutuality, and an administrative accord affirming American control, punctuated the imbalances in Tokyo-Washington ties. For the moment, the Japanese would have to bite the diplomatic bullet.”⁴⁴ The first of the diplomatic bullets was the negotiation of a fisheries treaty with the U.S. and Canada.

With the signing of the Japanese Peace Treaty in September of 1951, the six long years of the American Occupation finally came to an end. The Korean War had made the Japanese economy boom and Japan was once again about to transform itself into a modern industrial empire. The government lost no time in seeking to secure one of the rights of the Potsdam Declaration: access to raw materials that it had before the war. The Japanese had pioneered fishing in many parts of the Pacific and its industry was anxious to return and further establish territory claims. The government had already made the decision to rebuild the high seas fleet that had brought it so much wealth during the 1930s. Japan needed to be as aggressive as possible in reclaiming its high-seas fishing territory, because whatever agreement was reached with Canada and the U.S. would frame subsequent agreements with the Soviet Union, Communist China, and Korea. The future of the Japanese fishing empire was at stake.

⁴⁴ Michael Yoshida, *Japan and the San Francisco Peace Settlement* (New York: Columbia University Press, 1983), 100.

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Chapter Ten

Contested Science in the North Pacific Ocean

The fish businesses of northwestern America demanded protection for their major stocks of fish. The fish businesses of Japan, where the market for fish was very large, vigorously sought opportunities to expand. The national fishery policies of the three countries have been shaped largely by the businessmen who have had a continuing role in international policy-making activities.

Roy I. Jackson and William F. Royce¹

After the dismal 1944 Bristol Bay season, a group of Alaskan canners went to talk with W.F. Thompson at the School of Fisheries at the University of Washington. Since 1919, scientists had been warning that too many salmon were being caught. The War Production Board had increased harvest levels during the war, as Secretary of the Interior Harold Ickes had taken control of the fishery. The canners asked Thompson what they needed to do to restore the runs. Thompson spent the summer of 1945 in Alaska talking to scientists and fishermen, and observing the harvest. After reviewing the available literature, he had been led “to some conclusions which seem to me too radical to present either to the public or the Bristol Bay industry unless they are thoroughly proved.”² What was needed, Thompson declared, was a reconsideration of the entire biological basis for fishery regulation.

Thompson’s most important insight was that salmon couldn’t be managed as a single, homogeneous unit, with a single conservation goal. There were five

¹ Roy I. Jackson and William F. Royce, *Ocean Forum: An Interpretive History of the International North Pacific Fisheries Commission*. (Farnham: Fishing News Books Ltd.), 1986).

² Robert R. Stickney, *Flagship: A History of the Fisheries at the University of Washington* (Dubuque, Iowa: Kendall/Hunt Publishing Co., 1989), 46.

different species of fish, in hundreds of rivers and streams, and there was an appropriate harvest level for each and every single run. If fish populations were to be kept high for harvest, then research was needed to determine what was best for each run. A blanket goal of allowing fifty percent of the fish to spawn, as mandated by the White Act of 1924—even if it had been enforced, which it wasn't-- was too broad. Some runs needed greater escapement than others. The stocks, even among the same species, were highly divergent and had to be evaluated individually. Thompson did not believe there was sufficient information to determine how many fish were needed to spawn. He proposed setting up a long-term research program to obtain the information needed to establish regulations that would protect the spawning population, but still allow for harvest. Despite years of lip service about the scientific basis for American conservation, it was the first time research was focused broadly enough to identify what regulations were needed to conserve salmon.

Thompson's proposal was adopted by the Alaska packers in the summer of 1946 and enlarged in 1947. He organized studies on the life history of each salmon species, a survey of the spawning grounds, and a study of how many fish were taken with each kind of gear. In the summer of 1946, the canners in Southeastern Alaska requested similar studies in their area. The scale of the research was so great that the University of Washington created the Fisheries Research Institute in 1948, and the canners hired Thompson full-time to direct it.³

³Ibid, 47.

The 1946 season had been a disaster throughout Alaska, the worst in 19 years, but the U.S. Fish and Wildlife Service went ahead with the 1947 season as if nothing had happened.⁴ For 1951, the agency moved to radically liberalize the fishing regulations in Bristol Bay. For decades, the chief conservation measure was requiring fishermen to use 32-foot sailing gillnet boats. Now, the regulations allowed 32-foot gillnet boats, equipped with small engines and hydraulically-driven power net rollers. In anticipation of the increased catch, the Seattle-based fleet of freezer processor ships, most of them former military vessels sold to the industry at bargain basement rates, planned to spend their summers in Alaska, freezing salmon.

Pacific Fisherman, in a sternly-worded editorial, warned Secretary of the Interior Oscar Chapman that he bore a personal responsibility for making the decision to open Bristol Bay to power boats. "We shall not debate the right or wrong of that decision, but there can be no denial that from it has come fishing effort of an intensity which may destroy the salmon of Bristol Bay."⁵ Thompson's research showed that 1952 was going to be a dominant year for the sockeye fishery. Returns were higher during dominant years, and "this highly productive run of the 'big year' not only supports itself but contributes substantially to maintenance of the other years of the cycle." It was vital to ensure an adequate escapement, and *Pacific Fisherman* placed the responsibility squarely on Oscar Chapman.

⁴ Richard A. Cooley, *Politics and Conservation: The Decline of the Alaska Salmon* (New York: The Conservation Foundation, 1963), 157.

⁵ *Pacific Fisherman*, June, 1952, 20.

10.1 A New Fisheries Treaty for the North Pacific

With the signing of the Japanese Peace Treaty in San Francisco in September of 1951, the way was cleared to negotiate a fisheries treaty for the North Pacific. The International Convention for the High Seas Fisheries of the North Pacific (often referred to as the Tripartite Treaty) was signed May 9, 1952, at Tokyo, by representatives of Japan, Canada, and the United States. Three days later, the first three Japanese mothership fleets, with fifty catcher boats and twelve scouting vessels, left for the North Pacific, hoping to harvest 1.8 million fish. The actual catch was 2.1 million, and the Japanese made plans for a larger fleet in 1953, six motherships, 200 catcher boats, a whaling expedition, and a king crab expedition, as well as five trawlers and a fish meal factory. Fishing in the North Pacific region was undergoing significant expansion and the pressure on salmon stocks sharply increased.

Under the terms of the Tripartite Treaty, the resource was to be shared equally among the parties. The U.S. had been adamant that an unequal treaty would not be imposed on the Japanese, but they forced Japan to keep its fleet 600 miles west of Bristol Bay, at what came to be called the Abstention Line, initially set at 175 degrees west Longitude. The treaty called for special treatment for fisheries that were already utilized and “fully conserved.”⁶ This principle of abstention applied to stocks that were fully exploited and under continuous study

⁶ *Commercial Fisheries Review*, May, 1952, 46-47.

and regulation for conservation purposes; three North American fisheries qualified--salmon, halibut, and herring. The Japanese agreed to abstain from fishing on all three species east of the line.

But the line was provisional and would be reevaluated after five years to see if it impeded the treaty's goal of equal sharing of the resource. If the Americans could not prove that Alaskan salmon were managed at levels of MSY, abstention protection could be withdrawn from either salmon or halibut, opening the water closer to Bristol Bay to Japanese nets. The Abstention Line acted to enclose the Alaskan salmon fishery from the Japanese, based on the assertion that Bristol Bay stocks were fished at MSY levels. The Americans had five years to prove that the 175 degree line had scientific validity in separating North American and Asian salmon stocks. After decades of declaring that American fisheries were managed for conservation, the Americans were going to have to prove it to the skeptical Japanese.

10. 2 Fisheries Science and American Hegemony

In his analysis of postwar American science as a component of American hegemony, historian of science John Krige wrote that science was a vehicle to project American power in Europe. American and European physicists negotiated and exchanged knowledge on a platform of mutual respect. Krige used the term "coproduction," where both partners were seen as providing input into the

relationship.⁷ The American sense of destiny, of American exceptionalism, had been reinforced by the successes during the war. After 1945 and the explosion of the atomic bomb, the U.S. was the most powerful country in the world. American science was seen as promoting American values.

While Americans negotiated more or less on terms of equality with European physicists, the relationship between American fisheries scientists and their Japanese counterparts carried much more cultural and racial baggage. Japanese fisheries science, despite its role in creating the world's leading fishing nation, had not been recognized as being on par with American science and its focus on conservation. The conception of Japanese fishermen as little better than pirates went back to the 1900s and the bitter negotiations that had led to the fur seal treaty in 1911.

The initial framing for negotiating the 1952 fisheries treaty had been set back in 1936, when Secretary of State Cordell Hull responded to the Japanese proposal for a three-year scientific investigation into Bristol Bay salmon stocks. Hull claimed that the fish were fully utilized, and that American fishermen had foregone harvest to allow a percentage of the run to spawn. This financial sacrifice, and the burden of conservation paid by American fishermen, had been the essence of U.S. position to keep the Japanese out of Bristol Bay. The 1945 Truman Proclamation had gone a step further, giving the U.S. the authority to set up a conservation zone in the ocean, and to ban fishing by fleets from other

⁷ John Krige, *American Hegemony and the Postwar Reconstruction of Science in Europe* (Cambridge: MIT Press, 2006), 9.

countries. The U.S. had never actively set up the conservation zone, but the Abstention Line effectively established a zone of sorts in which Japanese fishing was banned, but without setting a precedent that could be used against American tuna boats off Latin America. The Latin Americans couldn't prove scientifically that bait stock were being depleted, the only justification the Americans recognized for restricting the catch.

Hull's formulation had always been based more on moral and political concerns than on empirical evidence or scientific investigation. Going back to the London Fisheries Exhibition of 1883, the Americans had persuaded themselves that they led the world in the development of scientific conservation. They had shown world leadership in negotiating the 1911 fur seal treaty, as the Canadian and Japanese pelagic fishing boats sent the Pribilof fur seal herds towards annihilation.⁸ Canada and the United States had argued bitterly over establishing halibut and salmon treaties, but they had eventually signed them, and two international fisheries commissions for salmon and halibut had been set up to share the catch between the two nations. But the Canadians and Americans negotiated the treaties with an equal stake in the outcome.

Fishermen from both nations had pioneered the fishery, and each recognized that the other had a right to a share—although how large a share was bitterly fought over. It was different with the Japanese.

⁸ Kurkpatrick Dorsey, *The Dawn of Conservation Diplomacy: U.S.-Canadian Wildlife Protection Treaties in the Progressive Era* (Seattle: University of Washington Press, 1998).

During the Occupation, the staff of the Supreme Commander Allied Powers had systematically denigrated Japanese science in general and fishery science in particular. The enormous resources that Japan had deployed in studying fish and fishing had been criticized for not being undertaken with the goal of conservation, the way American fisheries science was. SCAP's fisheries chief, William Herrington, had frequently scolded Japanese fishermen and scientists for their failure to consider conservation, and for ignoring conservation regulations imposed by other countries. Under Herrington, the Americans had tried to remake Japanese fisheries science, imposing American methods of statistics collection. According to a SCAP memo, dictated by Herrington shortly before he left Japan, Herrington had not been happy with the Japanese compliance in setting up an American-style management program.⁹

Just as the Americans disparaged Japanese science, they claimed that American fisheries science was superior to the Japanese because it was grounded in the "conservation" of stocks. But, as we have seen, this meant utilization. Hull's 1936 formulation had reinforced two perceptions: that the U.S. was a world leader in the conservation of resources, and that the Japanese were not. Herrington had frequently listed the Japanese sins against conservation while he was in Japan: the reluctance to sign the fur-seal treaty in 1911 and the desire to expand harvest in 1926, the refusal to comply with whaling regulations, and the frequent violations of the MacArthur Zone during the Occupation. All

⁹ Memorandum for Fisheries File, Aug. 29, 1950, Box 8870, Folder "Laws and Legal Matters." NARA RG 331.

these events contributed to the American perception that the Japanese were concerned only with catching as many fish as they could, regardless of potential negative impacts on the stocks.

10.3 Japan's Scientific Reputation

Was Japanese science weak? The denigration of Japanese fishery science flew in the face of at least the superficial evidence, since the Japanese had devoted considerable resources, not only to the development of fisheries science, but also to its dissemination in English. The Japanese had eagerly participated in international scientific conferences in the Pacific. Four Japanese scientists attended First Pan-Pacific Science Conference in Honolulu in August of 1920. In 1926, at a meeting in Tokyo, the Pacific Science Association was born.¹⁰ The meeting was opened by Prince Iyesato Tokugawa, president of the Pan-Pacific Association of Japan, who declared, "The Pacific Era is here."¹¹ The 1926 meeting was a national event in Japan, with participation by the Imperial family, government officials, educators, business men, farmers, and school children.¹² Fisheries research was published, also in English, as early as 1923, by the *Journal of the College of Agriculture, Imperial University of Tokyo*.¹³ The Committee on Pacific Oceanography of the National Research Council of Japan

¹⁰Philip F. Rehbock, "Organizing Pacific Science: Local and International Origins of the Pacific Science Association," in *Nature in its Greatest Extent: Western Science in the Pacific*, Roy MacLeod and Philip F. Rehbock, eds., (Honolulu: University of Hawaii Press, 1988), 195.

¹¹A.P. Elkin, *Pacific Science Association: Its History and Role in International Cooperation* (Honolulu: Bishop Museum Press, 1961), 9.

¹²Homer E. Gregory, "Pacific Science Association," *Science* 65, No. 1684 (1927), 35.

¹³Kamakichi Kishinouye, "Contributions to the Comparative Study of the So-Called Scombroid Fishes," *Journal of the College of Agriculture, Imperial University of Tokyo* 8, no. 3 (1923).

began publishing its findings in English in 1928.¹⁴ When W. F. Thompson in 1930 had sought the support of Japanese scientists in recovering drift bottles and buoys as part of an investigation into where halibut larvae drifted, the Japanese had immediately ordered their prefecture offices to turn in any bottles that were recovered.¹⁵ As the *1939 Japan Times & Mail* proclaimed, the Japanese were proud of their fishery science, and of the role it had played in developing such an effective fishing fleet. Fishing showcased Japan's industrialization and its modernization.

To a certain extent, Japanese science was geographically isolated, since rapid communication with Japan was technically impossible before World War II.¹⁶ Those who knew about the extent of Japanese science respected it. Homer E. Gregory, chairman of the Pacific Science Congress, wrote in a 1927 study that in the development of natural resources, including forestry, fisheries, and systemic botany, "the number of professionals is greater in Japan than that of most countries."¹⁷ Harald U. Sverdrup, director of the Scripps Institution of Oceanography, communicated with Japanese oceanographers.¹⁸ In 1939, he met Japanese scientists who attended the Sixth Pacific Congress in San

¹⁴ The Committee on Pacific Oceanography of the National Research Council of Japan, *Records of Oceanographic Works in Japan 1* (1928).

¹⁵ Box 276, Folder "Correspondence, General A-Z, 1930. International Pacific Halibut Commission Archives.

¹⁶ James R. Bartholomew, *The Formation of Science in Japan: Building a Research Tradition* (London and New Haven: Yale University Press, 1989), 6.

¹⁷ Homer E. Gregory, "Pacific Science Association," *Science* 65, No. 1684 (1927), 35.

¹⁸ Naomi Oreskes and Ronald Rainger, "Science and Security Before the Atomic Bomb: The Loyalty Case of Harold U. Sverdrup," *Studies in the History and Philosophy of Modern Physics* 31, No. 3. (2000), 353.

Francisco.¹⁹ Daniel Merriman, head of the Bingham Oceanographic Laboratory at Yale, wrote in 1949 that the U.S. had “a long way to go before we catch up with the prewar knowledge and ability of the Japanese.”²⁰ One of SCAP’s priorities had been translating Japanese fisheries and oceanographic papers into English. The Australians in Japan at the time of the Occupation were just as eager for Japanese technical information as the Americans. And Wilbert Chapman frequently warned of the substantial emphasis the Japanese placed on research, far outspending the Americans, implying that unless the Americans acted, the Japanese would out compete them in dominating the high-seas tuna fishery.

Since the Meiji Era and the fall of Shogun, Japan had eagerly embraced Western science, technology, and ideology. Historian Brett L. Walker wrote: “Foreign advisors brought to Japan deeply rooted opinions about the promise of modernization that, when integrated into the Japanese education system, workplace, political values, and attitudes about agriculture and the natural world, laid the foundation on which the Japanese nation would be built.”²¹ After the Meiji Restoration, Japan had shrewdly bet on one industry where it knew it could compete internationally. It simply wasn’t true that Japanese fishery science was “behind.” If anything, in cases such as the detailed life history of stocks, such as the work of Kamakichi Kishinouye, it was the reverse.²²

¹⁹ Roy Elwood Clausen, “The Sixth Pacific Science Congress,” *Science* 90, no. 2342 (1939).

²⁰ Daniel Merriman, “Biological Problems of the Ocean,” *The Scientific Monthly* 68, no. 1 (1949). 14.

²¹ Brett L. Walker, *The Conquest of Ainu Lands: Ecology and Culture in Japanese Expansion, 1590-1800* (Berkeley: University of California Press, 2001), 157.

²² Kishinouye, “Contributions to the Comparative Study of the So-Called Scombroid Fishes.”

What about the claim that the Japanese did not regulate their fisheries?

That was not true, either. The inshore fisheries, so important to the many coastal communities, were heavily regulated, boats were licensed and local associations strictly regulated the catch. Excess effort was transferred to the high seas, but the high seas were fished as Olympic fisheries, or pulse fisheries. Fishing was not sustained, but conducted through expeditions that returned home when the fishery goals had been met.

SCAP was undoubtedly correct when it pointed out that there was much duplication and inefficiency in the Japanese fisheries process. There was sure to be duplication in terms of work, and the results of studies in various prefectures may not have been systematically transferred and collated. James R. Bartholomew, in his story of science formation in Japan, suggested there were serious problem with the management of science.

Tokugawa traditions, reinforced by German influence, produced an autocratic government slow to sanction autonomy or forthright politicking by scientists and professors. Some technical specialists lost access to the uppermost levels of policy-making men. The most serious problem, however, was the inability of administrators trained exclusively in law to communicate with scientists and technical experts.²³

But this really did not translate into bad science or bad regulatory processes.

Japan had a long history of strictly regulating its fisheries, though the focus may have been towards the economics of fishing, not the conservation of

²³James R. Bartholomew, *The Formation of Science in Japan: Building a Research Tradition* (London and New Haven: Yale University Press, 1989), 269.

stocks. For example, the government sent a mothership operation to the Indo-Australian waters in 1931 to investigate the tuna resource. The expedition was repeated in 1931 and 1933, with the results published, but there was no further fishing, despite finding large quantities of yellowfin in the Celebes and Sulu Seas.²⁴ This suggests that the economics of the expedition were not sufficient for the fishery to be developed. The government might have chosen to subsidize the development of the fishery, but it did not.

After the fisheries were reorganized in 1949, the number of vessels and their tonnage was strictly regulated by the government. A 1962 study of the Japanese trawl fishery suggests that

possible depletion of the resources was not always recognized scientifically, nor were control methods, based on scientific considerations, always given priority over other methods in devising enforcement measures. Only as the result of declining catches, rather, did regulation place emphasis on restriction of fishing effort on specific grounds. The number of vessels and their tonnage then were limited by the Central Government. Control, under those circumstances, was for the express purpose of protecting the profitability of fishery operations.”²⁵

The role of fishing within Japanese life was completely different from the role of fishing in the U.S. While the U.S. during the 1950s was not at the point of limiting the number of boats and fishermen (that would not come until the 1980s), Japan had always heavily regulated its fisheries, most often to protect the inshore villages. The goals of Japanese fishing were different from the goals of

²⁴ Bell M. Shimada, *Commercial Fisheries Review*, “Japanese Tuna-Mothership Operations in the Western Equatorial Pacific Ocean,” June, 1951, 1-25, 2.

²⁵ N. Oka, H. Watanabe, and Akira Hasegawa, “The Economic Effects of the Regulation of the Trawl Fisheries of Japan,” *FAO Fish Reports* 5 (1962), 179.

American fishing, but the American observers during the Occupation judged strictly by an American standard. And it was a double standard, since American fisheries were in decline, especially Alaskan salmon, but the U.S. was reluctant to restrict American fishermen. Instead, it looked for reasons to restrict the Japanese.

10.4 Negotiating a Fisheries Treaty

Several scholars have argued that after the war, Japan was forced to accept several unequal treaties. Michael M. Yoshitsu cites multiple examples,²⁶ and he might have added the 1952 Tripartite Treaty. Legal scholar Harry Scheiber argued that the treaty represented a victory for the Americans and Canadians, because it kept the Japanese from Bristol Bay sockeye. However, I argue that the treaty's impact was much more mixed, when considered in the totality of Pacific fisheries. The Japanese were kept a limited distance from Bristol Bay, and they immediately challenged the U.S. to provide a scientific rationale for what was a blatantly political line at 175 degrees west longitude. And if the tuna fishery is included in the analysis, Japan was barred from the salmon fishery, but it gained access to the enormous American market for tuna. Restoring the Japanese tuna industry allowed the Japanese once again to become the world's leading fishing nation, and in the process, it destroyed the Southern California tuna processing industry.

²⁶ Michael M. Yoshitsu, *Japan and the San Francisco Peace Settlement* (New York: Columbia University Press, 1983), 100.

In an article written in 1989 for the *Ecology Law Quarterly*, Herrington wrote, with hindsight, that when he returned from Japan in 1951, he met with Chapman and discussed the difficulty the State Department was having in coming to agreement on a position on Japanese fishing. Herrington thought it might be possible to get countries to agree to waive their fishing rights under certain conditions, an early formulation of what he came to call the principle of abstention. Herrington wrote that Chapman conceded that it might “help resolve our tuna problem and the difficulties in the State Department.”²⁷ During the next six months, Chapman resigned and moved to California, while Herrington replaced him at the State Department.

Herrington was able to get agreement from the economic section of the State Department over some draft language on the principle of abstention before the peace treaty was to be signed in September of 1951 in San Francisco. Herrington then took his draft to Ambassador John Foster Dulles, who cleared it and recommended that Herrington lead the U.S. delegation to negotiate the fisheries convention. The International Convention for the High Seas Fisheries of the North Pacific Ocean was signed May 9, 1952, at Tokyo by representatives of Japan, Canada, and the U.S.

Herrington’s principle of abstention built on Cordell Hull’s 1936 formulation that conservation efforts would be jeopardized by new boats. Chapman had also built on that argument, contending that Bristol Bay salmon fisheries were mature,

²⁷ William C. Herrington, “In the Realm of Diplomacy and Fish: Some Reflections on the International Convention of High Seas Fisheries in the North Pacific Ocean and the Law of the Sea Negotiations,” *Ecological Law Quarterly* 16, No. 1 (1998), 103.

and could not be expanded without harming the American fishermen who had developed the fisheries in the first place. In Herrington's formulation, when a country had carried on extensive scientific study of a fish stock, and on the basis of scientific findings regulated the exploitation of the stock and limited fishing, then other states should waive the right to participate in that fishery. The principle would encourage countries to do research and manage their fisheries on a scientific basis, but it would not exclude other countries from fishing an unused or underused stock.²⁸

The Americans wanted the line at 180 degrees longitude. The Japanese countered with 165 degrees and according to Herrington's account of the negotiations, refused to budge. "It became clear there were a hell of a lot of salmon in that area and, from the presumptive knowledge in our possession, they had to be mostly of North American origin."²⁹ Herrington wrote that he knew a proposed line at 165 degree west, so near to the Alaskan coast, would not be acceptable to American fishermen or their supporters in the Senate. The negotiations appeared to be deadlocked.

Herrington proposed 175 degrees, and enlisted U.S. Ambassador William Sebald, who called on Prime Minister Yoshida and told him of the deadlock. Yoshida ordered the Japanese delegation to accept the 175 degree west line.³⁰

²⁸ Ibid, 103.

²⁹ Ibid, 107.

³⁰ Letter from Niles W. Bond to Robert McClurkin, Dec. 21, 1951. Box 1573, 398.245/12-2151, NARA, RG 59 Decimal Files.

One concession the Japanese did win was to continue to fish for king crab in Bristol Bay. While negotiations over the abstention line dragged on, the Japanese were hoping for a crabbing operation by April of 1952, whether the overall treaty was signed or not. The government had already gambled that signing the peace treaty would be a resumption of fishing on the high seas. Funds had been committed to prepare a fleet of motherships for the northern fishery. There was enormous pressure within the industry and the country to return to the northern waters that had been so profitable in the 1930s. Japan needed to import food to survive, and it had to be able to secure access to as many fish stocks as possible.

The Japanese wanted to send a mothership to the Bering Sea to fish for king crab in the winter of 1952, but they had decided against it. Herrington had warned that if the Japanese boats returned before a treaty was signed, "there will be extensive repercussions from the people of Alaska as well as from the Pacific Northwest coast," Herrington wrote. There was some consideration to forcing the Japanese to sign the fisheries treaty before the effective date of the Peace Treaty, a date that hinged on when all governments had ratified it.³¹ The pressures were serious enough that the Japanese government decided to put off the crab expedition until the fisheries treaty was concluded.

... it was obvious that the Japanese were getting little in the form of tangible benefit out of the agreement, other than a contribution to harmonious relations with the United States and Canada. The

³¹ Memorandum, William C. Herrington, "North Pacific Fisheries Convention," March 5, 1952. Papers of Wilbert Chapman, University of Washington, Box 26.

impression is hard to avoid that Japan entered the Agreement more to satisfy the desires of the United States and Canada than because of any hope of direct gain, and Japan's feelings of satisfaction would appear due in large part of its expectation that this Agreement would not prejudice its position with respect to Asiatic nations.³²

10.5 Differences in Power

While the Americans insisted Japan was not forced to accept an unequal treaty, the Japanese saw it differently. The treaty itself had the same sting as the unequal treaties of 1868 that Japan had been forced to accept after trading started with the west. The Japanese were able to enter negotiations with the Americans with the fishing industry united behind a government goal of regaining as much access as possible to the North Pacific salmon. The government had already made a substantial investment in expanding its mothership fleet, based on the assumption that it would be fishing again on the high seas. The initial Japanese position was that they had the right to fish the salmon, halibut, herring, and other stocks along the North American coasts on the same basis as Canadian and U.S. fishermen. Any restriction imposed on Japan had to be contested fully, or it might be used as a precedent by other countries to restrict the Japanese from their coasts.³³

The Americans were not so united. The Alaska and Seattle canners wanted a strong position that would keep the Japanese as far offshore as

³² Memo, Tripartite Fisheries Conference, Jan. 4, 1952. Box 2722, 611.006 NP/1-452, NARA, RG 59, Decimal Files.

³³ Roy I. Jackson and William Royce, *Ocean Forum, an Interpretive History of the International North Pacific Fisheries Commission* (Farnham, Surrey: Fishing News Books, Ltd., 1986).

possible, but there were still deep divisions within the State Department over a fisheries policy towards Japan. Some of the department's leading economic and political officers continued to advocate that Japan be given free access to the world's oceans, as other countries enjoyed. At a minimum, they argued for a treaty that would last five years, not the fifteen in Chapman's draft treaties. This faction wanted to strengthen the Japanese economy as a bulwark against Communism in Asia.

But the Department also did not want to jeopardize the high-seas tuna fishery and the role that it played in justifying a three-mile limit and upholding the freedom of the seas, fundamental cornerstones of American foreign policy. The U.S. insisted its tuna boats had the right to fish off Latin America and it refused to recognize territorial claims beyond three miles. The Abstention Line acted to enclose the Alaskan salmon fishery from the Japanese, but it was based on the assertion that stocks were being fished at MSY levels, and thus new entrants were banned for conservation reasons. Similar Abstention lines—say, for example, off Latin American, couldn't be justified for conservation reasons.

The Americans signed the treaty and hoped their politically-acceptable line would have some practical utility in terms to keeping the Japanese gillnets away from Bristol Bay sockeye. They had claimed since 1936, in one way or another, that salmon stocks in the North Pacific were being managed for conservation, which justified the exclusion of the Japanese from the world's richest fish

resource. The Americans had claimed this repeatedly, but it was not based on any scientific evidence. The Japanese, who had been tutored in American fishery science for the six years of the Occupation, wanted scientific proof that the Americans did not have. If the Japanese were expected to obey lines in the ocean, they wanted the lines justified scientifically.

10.6 Japanese Fishery Expansion in the North Pacific

The Japanese, constrained in so many ways by wartime regulations imposed by the Allies, had chosen to gamble that when a peace treaty was finally signed, the Japanese would be once again allowed to fish the high seas. They had been the world's leading fishing nation during the 1930s, and the government passed a series of subsidies designed to restore their fishing prowess.

The Japanese had a long history of subsidizing the fishing industry. This was partly a consequence of a far more important government policy of subsidizing the construction and operation of shipping, going back to the Meiji Era. Between 1900 and 1914, postal contracts and navigational bounties accounted for 77 percent of the total net earnings of all Japanese shipping companies with a capitalization of more than 300,000 yen.³⁴ Prewar, Japan was the third shipping nation in the world, carrying two-thirds of its import and export

³⁴ Jon Halliday, *A Political History of Japanese Capitalism* (New York: Pantheon Books, 1975). 56.

trade in its own vessels.³⁵ The government played a critical role in supporting the fishing industry when it subsidized the building of cold storage and refrigeration systems in 1923.

SCAP had inadvertently built on these policies when it established priorities to allocate scarce material and fuel for the construction of new fishing boats. The fleet was rebuilt quickly with far greater capacity than before the war. East Asian scholar Christopher Howe argued that what was distinctive about Japanese development during the post-war period was “the strong bias towards a combination of technical modernization and commercial expansion.”³⁶ This was certainly true of fisheries policy. As it had during the Meiji Restoration in 1868, Japan focused on identifying niche industries where it could compete, and focusing its coordinated economic policies where it had a competitive advantage. Shipbuilders were encouraged to build advanced hull designs and incorporate new engine technologies. The new Japanese fishing fleet was the world’s most modern.

The American Embassy in Tokyo reported in early 1953 that the government had given “considerable” aid to the fishing industry during the previous year. Direct subsidies to the industry totaled 633 million yen, or about \$1.8 million. The Bank of Development (Kaishatsu Ginko) granted some 300 million yen, or \$833,000, to build ten tuna boats over 200 tons each. There were

³⁵ Robert A. Fearey, *The Occupation of Japan, Second Phase: 1948-50* (New York: The MacMillan Company, 1950), 145.

³⁶ Christopher Howe, *The Origins of Japanese Trade Supremacy: Development and Technology in Asia from 1540 to the Pacific War* (Chicago: University of Chicago Press, 1996), 294.

plans to build another 15 and maybe 20 boats during 1953, each in excess of 300 tons, or about twice the capacity of the existing tuna boats, which were less than 150 gross tons.³⁷ Another 633,000 yen was spent on a range of products, including experiments on utilization of marine products, reconstruction and rehabilitation of fishermen's cooperatives, and some 322,000 yen as compensation for compulsory reductions of small-scale trawlers. The subsidies also included 262,000,000 yen, or \$730,000, for biological and oceanographic studies of tunas and tuna-like fisheries. There were funds to operate 14 research vessels, and four of them were used primarily in tuna research.³⁸ It was a substantial amount of money, and it reinforced the government's commitment to push for a restoration of Japanese fishing rights and not concede a meter of water.

10.7 The International Tensions

The Americans had imposed one line in the water on the Japanese; now the Koreans added a line of their own. South Korean President Syngman Rhee on Jan. 18, 1952, issued a Proclamation of Sovereignty over the adjacent seas. Rhee based the decision on international law and the need to permanently safeguard the national welfare and defense of the Republic. The Rhee Line, as it came to be called, claimed Korean sovereignty over the continental shelf and the adjacent waters and established exclusive fishery zones that reached about 200

³⁷ *Commercial Fisheries Review*, April, 1953, 48-49.

³⁸ *Commercial Fisheries Review*, January, 1953, 52-56.

miles. It left the Japanese with a far smaller body of water to fish than the MacArthur Zone. Japan issued a formal protest, declaring that Korea's action destroyed the freedom of the seas. In the reply, Korea listed the international precedents for its actions, starting with the Truman Proclamation of 1945, and the claims by Mexico, Argentina, Chile, Peru, and Costa Rica. Subsequent exchanges grew more caustic.

The Rhee line was a resumption of conflicts over fishing that went back to the 1930s, when the Koreans accused the Japanese of overfishing sardines in Korean waters. The fisheries confrontations continued until 1965, when a treaty was concluded. In the meantime Korea, the Soviet Union, and Communist China were seizing hundreds of Japanese vessels and capturing thousands of fishermen.³⁹

At one point, President Rhee wrote that "the Japanese, who still cannot discard their greed, are crossing the MacArthur Line, and many fishing vessels are entering our adjacent waters and taking resources in the sea. We cannot endure the situation as it is now."⁴⁰ A series of meetings was conducted, but the two sides could not reach agreement. Korea promulgated a fisheries conservation law that called for boats fishing within three miles of its coast to have permits. Anyone fishing without a permit could lose their boat, and be fined and jailed. Numerous Japanese fishermen were arrested, and were not returned

³⁹ Roy I. Jackson and William F. Royce, *Ocean Forum: An Interpretive History of the International North Pacific Fisheries Commission*. (Farnham: Fishing News Books Ltd.), 64.

⁴⁰ Weissberg Guenter, *Recent Developments in the Law of the Sea and the Japanese-Korean Fishery Dispute* (The Hague: Martinus Nijhoff, 1966), 9.

to Japan until subsequent negotiations began in 1957. The Korean demands, coming as the first fisheries agreement was being negotiated with Canada and the U.S., certainly heightened Japan's concerns about the future of its high seas fleet. The Japanese had been forced to accept the Abstention Line, but it did not want that to be a precedent for the Rhee Line.

The international tensions over high seas fishing continued to mount. The International World Court of Justice in 1951 ruled 10-2 in favor of Norway's right to establish a four-mile territorial claim and bar the British fishing industry from a fishery it had pioneered in 1906. In 1952, Peru, Ecuador, and Chile signed the Declaration of Santiago, claiming a 200-mile territorial sea. In 1953, the International Law Commission released a report recommending a six-mile territorial limit. It also recommended establishing an international fisheries agency, under the umbrella of the United Nations, with binding authority to resolve high-seas fisheries conflicts, recommendations that were opposed by both the U.S. and Japan. These events will be discussed in Chapter 11.

It was obvious that the days of *Mare Librium* were numbered, at least as far as fishing was concerned. The major naval nations, the U.S. and Britain, were now just two of the voices at the United Nations and on the International World Court. "The ideas and interests of small, non-nautical nations are becoming

increasingly dominant in consideration of the question,” William C. Neville, the State Department’s fisheries attaché in Tokyo, wrote to William Herrington in 1952.⁴¹

10.8 American Fishery Expansion in the North Pacific.

There was no doubt that the 1952 Tripartite Treaty was a victory for the United States, as numerous scholars have agreed.⁴² But it didn’t feel very much like a victory for the Alaskans on the front lines, the fishermen throughout the territory, and especially those in Bristol Bay. There was every reason to be concerned that taking salmon on the high seas meant that fewer of them would return to the rivers to spawn, and the Alaskan runs were already in trouble. While the signing of the treaty had been a projection of American might, the salmon industry saw itself as David, locked in a fight with a government-backed Goliath. The small gillnet boats were pitted against giant motherships, with enormous catching and processing capacity, manned by workers who were paid pennies.

The Americans also saw their inshore fishery as being heavily regulated. The U.S. Fish and Wildlife Service set seasons and decided how many days could be fished a week. It was not fishing flat out, but it was very close to it, given the efficiency of the fish traps, the laxness of the enforcement, and the ever-increasing number of fishermen, ratcheting up the pressure on the fish. W. F.

⁴¹ William C. Neville to William Herrington, July 25, 1952. NARA, RG 59, Box 2722, 611.006-NP/7-2552.

⁴² Michael M. Yoshitsu, *Japan and the San Francisco Peace Settlement* (New York: Columbia University Press, 1983), 100.

Thompson had launched his research plan to come up with a science-based fishery management plan, but the idea of regulating the number of fishermen, or the amount of gear, was still a long way outside the thinking of the industry and its managers. Both were much more interested in finding a way to regulate the Japanese, or to eliminate predators, such as seabirds and sea lions.

Writing in 1947, journalist Richard L. Neuberger described Alaska as a feudal barony where the absentee-owned mining and fishing corporations took millions in revenue and left next to nothing behind in social and economic benefits. Neuberger said that of 434 fish traps licensed by the Department of the Interior, only 38 of them were owned by Alaskan residents, and 245 of the traps were owned by large canning companies. The 1946 fish pack had been worth \$56 million, and the canning industry had paid a territorial tax of \$630,000, which Neuberger worked out to 24 cents on each case of salmon. The fishing industry had hired almost 11,000 Alaskans and paid them \$3.7 million. The “outside” work force had been 12,484 men, who were paid \$7.2 million. The “outside” wages were paid at the end of the season in a lump sum where the workers had been hired, so none of it was spent in Alaska. In addition, two Seattle steamship lines monopolized the Alaskan trade. The fishing industry, a preferred customer, paid an average of \$14.23 a ton for cannery supplies, while other Alaskan customers were charged an average of \$28.12 a ton.⁴³

⁴³ Claus-M. Naske. *A History of Alaska Statehood*. (New York: University Press of America, 1985), 123.

As the resident fishing population grew, there was more opposition to the control of the fish traps by the absentee canning industry. “If there was overfishing,” wrote historian John S. Whitehead, “it was not due to the unlimited entry of fishermen but to the fish trap. The fish trap was the symbol of everything that was wrong in the fishery and for that matter in Alaska—absentee exploitation, corruption of the legislature, and inept regulation by the federal government.”⁴⁴ In a 1952 referendum, Alaskans voted 20,544 to 3,479 to transfer control of fisheries to the territory.⁴⁵ But since Alaska was not yet a state, the Department of the Interior continued to make fishery regulations.

There was also unhappiness that the federal government had not done more to keep the Japanese further offshore. “Alaskan fishermen have repeatedly charged that the Japanese will fish out these areas if they are allowed to enter, and the assurances of joint research and control if needed is our best reply to these accusations,” Herrington wrote in 1952.⁴⁶ In June of 1952, the Japanese announced another salmon fishing operation, in the seas adjacent to the International Date Line, outside the waters of the North Pacific Fisheries Treaty convention. The fishery would be in the Western Aleutian Islands. The Japanese announced they would fish within the terms of the treaty convention. Nobody knew if the salmon in the area originated in the streams of Alaska or Siberia.⁴⁷

⁴⁴ John S. Whitehead. *Completing the Union: Alaska, Hawaii, and the Battle for Statehood*. (Albuquerque, University of New Mexico, 2004), 215.

⁴⁵ Richard A. Cooley. *Politics and Conservation*. (New York: The Conservation Foundation, 1963), 185.

⁴⁶ Herrington to Leonard Warner, July 12, 1952. NARA RG 59, Box 2272, Folder 611.006.

⁴⁷ *Pacific Fisherman*, June, 1952, 22.

The U.S. State Department supported the expanded Japanese fishery. Herrington quoted Secretary John Foster Dulles in a 1952 letter to an Alaska legislator, who wanted further restrictions on Japanese fishing:

Any principle that we could invoke to require this would be invoked by Korea, China, the Philippines, Formosa, etc., to keep the Japanese from fishing in the western Pacific. Since the Japanese are vitally dependent upon fishing and since the free world, in turn, is vitally dependent upon Japan being part of it and not part of the Soviet world, there must be some adjustment.⁴⁸

10.9 Declining Runs in Alaska

Dwight D. Eisenhower was elected president in 1952. Among the changes under his administration was new leadership at the U.S. Fish and Wildlife Service. The 1953 Alaskan salmon pack was less than three million cases and economic distress was so acute that Eisenhower declared parts of the territory to be a disaster area and sent federal relief funds and food supplies from the Department of Agriculture. Public works projects and other stopgap measures followed to lessen the impact of the fishery failures.⁴⁹ The drop in the catch was blamed on the high seas Japanese catch, not on the increased pressure on the resource because of the motorized gillnet boats and the presence of the freezerships. Also coming in for a share of the blame was the federal

⁴⁸ Statement of William C. Herrington before the Committee on Foreign Relations of the Senate." Box 38, Folder 5. Wilbert Chapman Papers, University of Washington Special Collections.

⁴⁹ Richard A. Cooley. *Politics and Conservation*. (New York: The Conservation Foundation, 1963), 186.

management. Albert Day, who had headed the Fish and Wildlife Commission, was replaced by John L. Farley, who recommended a series of sharp reductions.⁵⁰

Farley traveled to Alaska in the fall of 1953, to hear what fishermen had to say about the salmon fishery. Gingerly, he brought up the unpopular topic of how to limit the catch. His initial suggestions were a complete closure on Prince William Sound for two years, a fifty percent reduction in fishing effort on Cook Inlet, and a similar reduction of effort throughout Southeast Alaska. Farley emphasized that he was calling for a reduction in fishing effort, not a reduction in the units of gear. This meant that same number of boats would fish for fewer days. Indeed, *Pacific Fisherman* summed up his suggestions with a headline: “Longer Seasons, Less Intensity, Prescribed for Alaska Fishery.”⁵¹ The article went on to say that Farley promised flexibility in case runs turned out to be heavier than expected, so fishing could be expanded; there was still great reluctance not to allow all the available fish to be caught, instead of spawning. He also suggested a voluntary effort reduction in Bristol Bay.

By the following year, it was obvious that voluntary reductions and a decrease in effort but an increase in time was not going to be enough. “No Painless Pattern for Cutting Alaska’s Intensity of Fishing,” summed up *Pacific Fisherman* in January of 1954.⁵² The same issue reported on a speech by Orme Lewis, assistant secretary of the Interior: “Use is the very essence of

⁵⁰ *Pacific Fisherman*, December, 1953, 16.

⁵¹ *Pacific Fisherman*, December, 1953, 16.

⁵² *Pacific Fisherman*, January, 1954, 10.

conservation prevailing today in the Department of the Interior—and I mean ‘use’ which provides continuing benefit from our resources. The long-term public interest is the yardstick for our decision.”⁵³

The same year, the U.S. Fish and Wildlife proposed eliminating fish traps in Alaska, a decision that *Pacific Fisherman*, with great insensitivity, likened to having the “stunning effect of the Hiroshima atomic bomb” on the Alaskan fisheries.⁵⁴ When Sen. Warren Magnuson held hearings throughout Alaska in December of 1955, there were many witnesses unhappy about the high-seas Japanese gillnet fishery, blaming it for reductions in the Alaskan catch. Edward Allen insisted the U.S. had the right to restrict the high-seas Japanese fishing if it caught American or Canadian-produced salmon. Other witnesses concentrated on the necessity for controlling predators, especially sea lions.⁵⁵ Fishing was not considered the primary cause of the declines.

The 1954 *Pacific Fisherman* yearbook edition noted that the Alaska canned salmon pack was below three million cases, for the first time since 1921, “due entirely to lack of fish—to failure unforeseen.”⁵⁶ But of course it had been foreseen, as far back as 1919. Nobody wanted to believe the runs were overfished by Americans. It was easier to blame the Japanese.

⁵³ *Pacific Fisherman*, January, 1954, 10.

⁵⁴ *Pacific Fisherman*, November, 1955, 1.

⁵⁵ *Pacific Fisherman*, December, 1955, 25.

⁵⁶ *Pacific Fisherman*, Yearbook, 1954, 87.

10.10 The International North Pacific Fisheries Commission

When the fisheries treaty was finally signed in May of 1952, it established the International North Pacific Fisheries Commission (INPFC), composed of representatives from Japan, Canada, and the U.S. The Soviet Union declined to participate. The North Pacific Convention entered into force on June 12, 1953, once it had been ratified by all three countries.⁵⁷ The Commission was empowered to investigate fish stocks of the North Pacific and recommend joint conservation actions

The U.S. hosted the first meeting of the new Commission in Washington, D.C., starting in February of 1954. Many of those who attended had also been involved in negotiating the Convention two years earlier. The delegations were a mix of political and fishing industry figures, along with high-level senior scientists. The four American commissioners were Seattle attorney Edward Allen; Milton E. Brooding of San Francisco, a tuna industry representative; John L. Farley, director of the U.S. Fish and Wildlife service, and Frank B. Heintzleman, Governor of the Territory of Alaska.⁵⁸ The commissioners for both Japan and Canada followed a similar mixture of government officials and company or industry representatives. All delegations were backed with substantial contingent of scientists, lobbyists, and representatives of fishery organizations.

Commission headquarters was established at Vancouver, B.C. An interim executive director was appointed in August of 1954, Milton C. James, formerly

⁵⁷ Roy I. and William F. Royce Jackson, *Ocean Forum, an Interpretive History of the International North Pacific Fisheries Commission* (Farnham, Surrey: Fishing News Books Ltd., 1986), 19.

⁵⁸ *Ibid*, 56.

with the U.S. Fish and Wildlife Service. An assistant director, Hiroshi Kasahara, was appointed in September of 1954. Both were busy preparing for the first meeting, which took place in Vancouver in October of 1954. Kasahara was one of the young graduate students who had been sent to the U.S. by SCAP to study U.S. fisheries science.⁵⁹

Much was at stake. Pre-war, the average annual catch of salmon by Japan during its peak fishing period, 1935-1939, was 188,000,000 salmon, or roughly 350,000 metric tons. This included production from Kamchatka and northwestern Okhotsk Sea, as well as the Japanese islands. The total North American production ranged between 225,000 to 350,000 mt until 1940. Of this, about one-quarter was Canadian production, the rest was American. The Soviet catch was estimated at perhaps 30,000 to 50,000 mt annually, mainly from the stocks originating along the west side of the Okhotsk Sea and in the Amur River.⁶⁰

In their account of the creation of the International North Pacific Fisheries Commission, Roy I. Jackson and William F. Royce paint a dignified portrait of how scientists from Japan, Canada, and the United States worked together to conserve salmon the North Pacific Ocean. It is a sober and scholarly account, and also an autobiographical one, for Jackson and Royce both were associated with the Commission during its early years. They wrote of the “constructive and

⁵⁹ Itinerary and press release, March 9, 1950, Box 8871, Folder “Interchange of Persons Program.” NARA RG 331.

⁶⁰ Roy I. Jackson and William F. Royce, *Ocean Forum: An Interpretive History of the International North Pacific Fisheries Commission* (Farnham: Fishing News Books Ltd., 1986), 46.

friendly relationships among Commissioners, advisors, and scientists,” a collaboration that grew as the “able and articulate men, increasingly well-versed in the problems with which they were dealing.” They give credit to this evolving relationship as being rooted in the steadily increasing body of scientific knowledge “that was tested and verified by the diligent scrutiny of informed scientists from the three countries before conclusions were drawn.”⁶¹

To be sure, Jackson and Royce brought impeccable credentials to their task. Jackson was assistant director of the International Pacific Salmon Commission, then Director of the INPFC. He was also the director of fisheries for the FAO. Royce was a fishery science and administrator with U.S. government, a professor and administrator at the School of Fisheries at the University of Washington, and a consultant to fishery development in numerous countries. Both men were involved in INPFC for about ten years in the 1950's and 1960's. “We confess that we share an admiration for the organization. We approach our interpretation primarily from a North American viewpoint, but with familiarity and considerable knowledge of the Japanese perspective and philosophy of fishery management.”⁶² Yet the picture they painted cannot be sustained historically.

The 175 degree line was “arbitrary and provisional because of lack of knowledge (and agreement) about the intermingling, if any, of salmon of Asian and North American origin in the ocean,” they wrote.⁶³ Thus the Protocol to the 1953 Convention (Appendix A) stipulated that the Commission should investigate

⁶¹ Ibid, 71.

⁶² Ibid, 168.

⁶³ Ibid, 34.

the waters of the Convention area to determine if there were areas where Asian and North American stocks intermingled. If the stocks were found together, then the Convention called for conducting suitable scientific studies to determine the line or lines that “best divide” or “more equitably divide,” these stocks. From the very beginning, the success of the INPFC was defined by how well it met its “scientific” objectives. And in order to do so, it had to begin an investigation into oceanography and biology of fish in the sea.

To Jackson and Royce, the success of INPFC lay in the research program it built, and the enormous amount of knowledge its scientists acquired about the biology of the fish of the North Pacific. While the initial focus was on salmon, halibut and herring also qualified for abstention from the Japanese fishery. Research was soon expanded to king crab and bottomfish.

One critical question was where did salmon go in the ocean-- and when did they go there? Salmon had been studied in the rivers and streams for decades, but with the exception of work done by the Japanese, very little research had been done at sea. Now, ocean migration had to be studied, in order to provide the information the Commission needed to divide the fish. The Standing Committee on Biology and Research was established, which set six goals: studying the migration patterns identified during fishing, tagging fish to determine patterns, marking smolts as they entered the ocean, determining the stocks using morphological or physiological or biochemical characteristics, special experimental fisheries aimed at learning more about migration, and a

study of the oceanographic background, both physical and biological. It took until 1956 to organize the first substantial field operation in the Commission's research plan.⁶⁴

What the initial INPFC research cruises found was disarmingly complex. Salmon traveled far further in the ocean than anybody had suspected. "Asian chums were found in the Gulf of Alaska, Columbia River chinook off the central Aleutians, Bristol Bay sockeye and Yukon River chums off the western Aleutians."⁶⁵ One reason for the vast number of salmon in the Northern Pacific waters was the size of the pasture where they grazed. Before the start of the industrial fishery, salmon utilized all of the spawning territory they could, from creeks and rivers throughout the West Coast of North America, and the Eastern coast of Asia. To sort out the migration for each species was a formidable task, made more difficult by the enormous acceleration of salmon fishing by both Japan and the Soviets after 1951.

10.11 The Japanese Fishery Expansion in the North Pacific

By 1955, there were 12 Japanese fleets with 406 catcher boats, all operating in a coordinated pattern that had boats search for fish before moving the motherships into position to set their miles of netting for the night. Negotiations began with the Soviet Union to restore access to the waters off Kamchatka, and for a resumption of fishing for salmon, trout, and crab in the Sea

⁶⁴ Ibid, 83.

⁶⁵ Jackson and Royce, 60.

of Okhotsk.⁶⁶ Australia had announced in late 1954 that it would permit Japanese pearl fishing in Australian waters on a limited basis, and that Japan had agreed to abide by the provisions of the Australian Pearl Fisheries Act and Regulations.⁶⁷ Private fishing agreements were signed with Communist Chinese companies to trawl in Chinese territorial waters.⁶⁸ The Japanese were also poised to substantially expand their return to the Mandated Islands for tuna, destined to be sold into the American market.

But the inshore Japanese fishery continued to be plagued by too many boats and too many fishermen. The government in the spring of 1952 estimated the fishing population of the eleven prefectures bordering on the Inland Sea at 260,000. When the government removed price controls in 1950, prices for some fish soared, while other prices fell drastically. The cost of fishing materials had risen. An American dispatch from Tokyo listed the problems: too many fishermen to catch the available fish, attempting to increase the standard of living for fishermen by lowering operating costs, and a need for assistance to allow the industries to accumulate enough capital to replace aging equipment.⁶⁹ Still, despite the restrictions on fishing in areas around Japan, and the abstention line

⁶⁶ *Commercial Fisheries Review*, July, 1954, 51-52.

⁶⁷ *Commercial Fisheries Review*, September, 1954, 53-54.

⁶⁸ *Commercial Fisheries Review*, February, 1953, 58-59.

⁶⁹ *Commercial Fisheries Review*, March, 1952, 43-44.

in the North Pacific, statistics released in 1952 on the global catch placed Japan as the world's major fishing nation in 1949, catching some 2.9 million mt. of fish.⁷⁰

The increased Japanese offshore catch and the drastic declines in the American inshore catch increased tensions as the first five-year review, scheduled for 1959, drew closer. In their account of the development of INPFC, Jackson and Royce argue that as the Commission's work steadily evolved after its first meetings in 1954, the scientists established positive working relationships, based on increased knowledge and trust as research proceeded. Jackson and Royce apply a similar veneer of civility over what were undoubtedly very bitter, high-stakes battles over the allocation of millions of dollars worth of salmon, as well as the political tensions generated by the Abstention Line. Jackson and Royce also point to the increasingly political context in which the scientists began their research program. "The scientists were pushed by political forces to be contestants especially when knowledge was lacking or uncertain," they write.⁷¹

In Bulletin No. 1, published by the INPFC in June of 1955, five Japanese scientists published a biological review of salmon near Japan. They wrote that conservation measures in Japan were different from those in Canada and the U.S., and that Japanese "backwardness in development of this field of scientific

⁷⁰ *Commercial Fisheries Review*, November, 1952, 41-42.

⁷¹ Roy I. Jackson and William F. Royce, *Ocean Forum: An Interpretive History of the International North Pacific Fisheries Commission*. (Farnham: Fishing News Books Ltd., 1986). 71.

research is not deniable either.”⁷² The five went on to quote two American biologists who had visited Japan during the waning days of the Occupation, Willis H. Rich and Richard Van Cleve. Both American scientists had warned the Japanese they were overly reliant on hatchery production in Hokkaido. The five Japanese scientists concluded that the lack of a conservation policy to assure spawning escapements for salmon was “doubtlessly the most serious defect which may undermine salmon resources in this country.”⁷³ The propagation of salmon in Hokkaido was incorporated into a national development program in 1952.⁷⁴ The program would be widely copied both Americans and Canadians during the 1960s and early 1970s.

The political context of the formation of the Commission was obviously more complex and nuanced than Jackson and Royce admit, although they were frank about the political pressures scientists and Commissioners faced, especially as the 1958 deadline approached, when the Commission was scheduled to evaluate the validity of the Abstention Line. A different assessment was provided by a Japanese scientist, Tomonari Matsushita, of the Research Investigation Section of the Japan Fisheries Agency. “The Japan-United States-Canada Fishery Treaty,” was published some time in 1958, part of the package of Japanese documents that were exchanged with American and Canadian

⁷² Research Division, Fisheries agency, Japanese Government, “On the Salmon in Waters Adjacent to Japan,” A Biological Review,” International North Pacific Fisheries Commission, Report No. 1, 82.

⁷³ Ibid, 85.

⁷⁴ T. Kobayashi, “Salmon Propagation in Japan,” *Salmon Ranching*, J.E. Thorpe, ed. (London: Harcourt Brace Jovanovich, 1980), 91-107, 98.

scientists on the preliminary results of the first years of research on salmon in the North Pacific. Matsushita wrote that the problems with the fisheries treaty could not be considered without taking into account the

the fear of the advancement of Japanese fisheries which has been felt for the last half-century and which is still being felt today by those connected with fisheries in the United States and especially in the states along the Pacific Coast. An unbroken current of such thought runs through the series of measures which the United States has been taking with respect to Japanese fisheries since the defeat of Japan. The Japan-United States-Canada treaty was what might be called a summation of the plans which the United States had been adopting one after another, in the sense that thereby a guarantee against the threat of the advance of Japanese fisheries was obtained for at least the next ten years.⁷⁵

Matsushita identified the biological problem with the treaty as its reliance on Maximum Sustained Yield, which he said the Americans did not have sufficient data to establish.

Matsushita pointed out that salmon had not been fished in northern Alaska or the Aleutians, so it was unreasonable for the Americans to argue that MSY levels had been attained on Alaskan stocks. The Abstention Line had been a political construction, to exclude Japan from Alaskan waters. Now, the Commission was doing the science to back up the politics, to decide if the line was appropriate. When the Canadians and Americans halibut and salmon commissions had been set up, the research had been done first, then the regulations had been established. In the North Pacific, in dealing with the Japanese, the rules had changed. The abstention line had been established for

⁷⁵ Tomonari Matsushita, "The Japan-United States-Canada Fishery Treaty," (Tokyo: Japanese Fisheries Agency, 1957), 5.

political reasons, with the scientific justification to be determined through the research program. He concluded that, “prima facie this treaty seems to be constructed very scientifically and rationally, but in reality it is composed of extremely political elements.”⁷⁶ We will come back to Matsushita’s critique of MSY in Chapter Fourteen.

⁷⁶ Ibid., 16.

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Chapter Eleven

The Road to Rome

“There is no way of getting tuna out of the ocean cheaply.”
Wilbert M. Chapman¹

In the years immediately after the war, the conflict over fishing was driven by territorial claims to the fish stocks of the high seas. But by the early 1950s, a new front opened in the fish wars, the battle over tariffs on fish products. The American fishing industry sought protection from cheaper imports, but the domestic concerns were trumped by foreign policy considerations involving Iceland, Canada, Japan, and Latin America. The State Department was anxious to maintain the air base that had been established in Iceland during the war. Canada was a major trading partner and had begun restructuring its East Coast industry to produce frozen fillets that could be turned into fish sticks for the American market. The Japanese were firmly set on the course established during the American Occupation, expanding fisheries back to the high seas. The importance of strengthening the Japanese economy increased as the Cold War deepened. Peru warned that if a tariff against their fish was increased, they would consider banning all American boats from their territorial waters, striking a blow at the cornerstone of American foreign policy, the freedom of the seas for

¹ W.M. Chapman Report, Panama City, April 8, 1953, Box 103, Folder, “Dr. Chapman’s Reports.” American Tuna Association files, Scripps Institution of Oceanography.

U.S. merchant ships, Naval vessels, submarines, and fishing boats. With so many foreign policy considerations, the fate of domestic fishermen seemed a small price to pay for a new world order.

In 1948, Iceland moved decisively to enclose its waters from the foreign fishing fleets that had been an irritant since the 1890s. Citing the Truman Proclamation of 1945, Iceland declared a 200-mile limit. The following year, Iceland's delegation to the United Nations requested that the International Law Commission study the issue of territorial claims. Despite strong opposition from the Western European nations fishing in Icelandic waters, the UN backed Iceland's motion. Icelandic scholar Hannes Jonsson considered the decision an important milestone in the evolution of the Law of the Sea. "By adopting this resolution, the General Assembly implicitly agreed with the Icelandic delegation that the opinion of the leading West European powers--that the 3-mile limit was firmly established rule of international law of the sea--was wrong, and accepted the necessity of studying the regime of territorial waters."²

Norway also had long-standing grievances with the British trawlers that had fished in their waters since 1906. There had been decades of diplomatic discussions but no resolution, and in 1935, Norway issued a decree expanding its waters to a four-mile belt seaward from straight baselines drawn between 48 points on Norwegian promontories, islands, and rocks. The result was the enclosure of a large area of water that formerly been regarded as the high seas

² Hannes Johnson, *Friends in Conflict: The Anglo-Icelandic Cod Wars and the Law of the Sea* (London: C. Hurst & Company, 1982), 56.

and an important British fishing ground. Britain applied to the International Court of Justice at The Hague for a ruling, and in 1951 the court upheld the Norwegian position.³ The decision was one of the first successful attempts by a country to restrict foreign fishing on territorial grounds, and it was a substantial blow, not only to Britain's distant water fleet, but to the U.S. distant water claims as well.

The International Law Commission, which had been studying the territorial and fishing questions since the late 1920s, issued a draft report in the summer of 1952. It recommended the creation of an international framework, under the Food and Agriculture Organization of the UN, to come up with regulations to protect fish resources from waste or extermination on the high seas. The recommendations would be binding. And it also recommended that territorial limits be expanded to six miles. Enclosure increasingly seemed the only way for smaller nations to protect themselves from the larger, more powerful fleets of distant water nations, and their right was being recognized in international law.

The actions by Iceland, Norway, and the law commission spurred the Latin Americans in their quest to control their own territorial waters. At a series of meetings, starting in Santiago in 1952, they began talking about a 200-mile regional zone, with their own regional fisheries research organization, and controlling passage through their waters. Latin America appeared to be moving decisively in the direction of enclosure, as it was the only means to protect its baitfish from American fishermen. Tensions increased as more and more

³ L.C. Green, "The Anglo-Norwegian Fisheries Case, 1951." *Modern Law Review* 15 (3), 373-377, 373.

American tuna boats were arrested and fined. The dispute came to a head at the meeting in Rome during 1955, when the U.S. used its “scientific” theory of fishing, MSY, to prevent the creation of an international body that could regulate U.S. fishing. The U.S. also acted to prevent the Latin Americans from setting up a regional zone with its own international law, and to prevent Peru, Ecuador, and Chile from acting to conserve their fish stocks. The end result of the Rome conference, discussed in Chapter Twelve, was that in order to regulate fishing for conservation reasons, countries would have to demonstrate that depletion had already occurred. Evidence of overfishing would be necessary before fishing could be controlled or halted. This would be akin to closing the barn door after the horse had bolted.

11.1 U.S. Foreign Policy and Latin America

There was deep unhappiness in Latin America over U.S. policy towards the region. Dwight D. Eisenhower had campaigned for the presidency during 1951 by charging that the Truman administration had betrayed the trust of Latin America by reneging on war-time promises of economic cooperation. The Truman administration had decided to subordinate regional concerns to the more important tasks of rebuilding Western Europe and Japan as bulwarks against communism.⁴ Despite the substantial support provided by Latin American

⁴ Stephen G. Rabe, “Dulles, Latin America, and Cold War Anticommunism.” *John Foster Dulles and the Diplomacy of the Cold War*. Richard H. Immerman, ed., 159-187. 162.

countries during the war, the Administration poured \$19 billion into Western Europe between 1945 and 1950, while Latin America received little more than promises of future consideration.⁵

But the U.S. was concerned about hunger in Latin America, believing that it led to political instability and opened the door to Communist agitators. There were Communist political parties in many countries. Mexico, for example, was “disturbingly passive toward Communism, tolerating it as a variation on national revolutionary themes.”⁶ The Truman Administration saw Communist activity as a danger to U.S. strategic interests in the region, which included Venezuelan oil and Chilean copper. For many U.S. policy makers and scientists, the solution lay in the transfer of Western technology and ideology to undeveloped countries, which would then follow the American progression towards capitalism and democracy. As historian Michael E. Latham has argued:

Theorists placed Western, industrial, capitalist democracies, and the United States in particular, at the apex of their historical scale and then set about marking off the distance of less modern societies from this point. Convinced that the lessons of America’s past demonstrated the route to genuine modernity, they stressed the ways the United States could drive ‘stagnant’ societies through the transitional process.⁷

⁵ Michael Latham, *Modernization as Ideology: American Social Science and Nation Building in the Kennedy Era* (Chapel Hill: University of North Carolina Press, 2000), 74.

⁶ State Department Correspondence, 1951-1952, White House Central Files, Box 42, Folder “State Dept. Correspondence 1951-62.” *Latin American*, March, 1951, Truman Presidential Library.

⁷ Michael Latham, *Modernization as Ideology: American Social Science and Nation Building in the Kennedy Era* (Chapel Hill: University of North Carolina Press, 2000), 4.

One way for the Latin American countries to achieve economic self-sufficiency was to develop their fisheries along an American model, using American expertise and technology. The fish would be exported to the U.S.

By 1953, the Eisenhower administration had developed a new policy towards Latin America, laid out in the National Security Council Document 144/1. “The document interpreted inter-American efforts solely within the context of the Soviet-American confrontation,” wrote historian Stephen G. Rabe.⁸ The Americans wanted their neighbors to support U.S. positions at the United Nations, eliminate the menace of internal communism, produce strategic raw materials, and cooperate in defending the hemisphere.

But while the U.S. wanted trade and good relations in Latin America, it was up to the Latin Americans to create the right political climate to draw capital investment to their countries. Despite Eisenhower’s campaign complaints, the U.S. devoted about one percent of its development assistance to Latin America during the 1950s, with most of the money going to Bolivia, Haiti, and Guatemala. The U.S. insisted that Latin American governments had to recognize that the bulk of the capital needed for economic development was best supplied by private enterprise, so it was up the governments to create a climate to attract private investment.⁹

Latin American governments attempted to foster private development through fisheries. The chief vehicle was the Point Four Program, announced by

⁸ Stephen G. Rabe, “Dulles, Latin America, and Cold War Anticommunism.” *John Foster Dulles and the Diplomacy of the Cold War*. Richard H. Immerman, ed., 159-187. 162.

⁹Ibid, 179.

Truman on January 20, 1949. The Point Four Program was the technological front of the Cold War, using American technology, especially in agriculture, to inculcate American values and capitalism into Third World countries.¹⁰ By 1953, there were Point Four Fishery Projects in Mexico, Peru, Colombia, El Salvador, and the Dominican Republic, as well as in Liberia, Lebanon, Egypt, Jordan, Iran, India, and Indonesia.¹¹

The Food and Agricultural Organization (FAO) of the United Nations was also starting to be more active. FAO had formed the Extended Technical Assistance Program to funnel advice on agriculture and fisheries information to the Far East, Latin America, and the West Indies. FAO assigned E. C. Schweiger to do biological work in preparing a plan for the development, conservation, and management of Ecuador's fisheries. Other surveys were begun in Brazil, Pakistan, Ceylon, and Haiti.¹²

The Latin Americans did attempt to attract foreign capital for fisheries projects, but while the fish resources of the area were potentially rich, catching fish was not easy. Colombia, for example, bought three Swedish fishing vessels and an entire fish plant in 1952, to catch and freeze tuna caught off the Galapagos. Six months later, the boats and the plant were for sale. They had been unable to catch enough fish to supply the plant.¹³

¹⁰ John H. Perkins, *Geopolitics and the Green Revolution* (Oxford: Oxford University Press, 1997), 145.

¹¹ Point Four Fishery Projects, April 1, 1953. Box 14 FI 170 RG 14, Folder, "Technical Assistance, U.S. Fish and Wildlife." FAO Archives, RG 14 FI 170.

¹² *Canadian Fisherman*, October, 1951, 32.

¹³ *Commercial Fisheries Review*, March, 1952, 41.

When projects were successful, such as an American-funded plant to process shrimp in Ecuador, the products were typically exported to the U.S., not used to feed local people, despite the humanitarian rhetoric about feeding the poor. Total landings of tuna and bonito in Peru were 105,550 mt in 1951, but the domestic market consumed only 200 mt of it.¹⁴ The rest was exported to the U.S. The U.S. Fish and Wildlife Service in 1952 sent one of its research ships to explore the shrimp grounds off the Caribbean coasts of Honduras and Nicaragua. The objective was information to expand a fishery by American boats, based in Brownsville, Texas.¹⁵

The expanding global market (especially for fish meal), technology transfer, and short-term loans from local bankers were all significant factors in the growth of fisheries in Latin America.¹⁶ However, the fledgling Latin American fishing industry was about to get caught in between two sets of pincers: the tariff battle over entry to the U.S. market for tuna, and the territorial pressures that were forcing Americans to search further from home for high seas tuna. The global fishing industry was involved in a complex economic and political chess game, with a great deal of money and the right to harvest millions of tons of fish at stake.

¹⁴ *Pan American Fisherman*, July, 1953.

¹⁵ *Commercial Fisheries Review*, October, 1952, 48-50.

¹⁶ Alonzo Aguilar Ibarra, Chris Reid, and Andy Thorpe, "The Political Economy of Marine Fisheries Development in Peru, Chile, and Mexico," *Journal of Latin American Studies* 32, No. 4, 2000, 503-527.

11.2 The Territorial Claims

The U.S. argued that if states could unilaterally claim whatever seaward limits they wanted, the result would be international conflict and chaos. But Peru saw the matter differently. Peru started from the premise that all states were equal, sovereign, and independent, and that states had a duty to recognize and respect the sovereign status of other states. Peruvians saw the three-mile limit as serving European self-interests. They also felt that Peru was not bound to recognize anything it had not signed and ratified. Legal scholar David Loring wrote that Peru believed “the 200-mile doctrine to be modern and progressive and the most practical and equitable means for promoting fishery conservation and development. Peru’s position reflects a tradition of fierce individualism and independence inherent in Latin American culture.”¹⁷

Mexico had been the first country to respond to the Truman Proclamation’s declaration of the U.S. right to create conservation zones to protect its fish stocks, signing its proclamation a month after Truman issued his two proclamations. Argentina acted on Oct. 11, 1946, declaring control of its continental shelf, but not affecting the freedom of navigation. Chile, on June 23, 1947, issued the first 200-mile declaration, which was copied by Peru in its Aug. 1, 1947 declaration.¹⁸

The U.S. did not have a fishery in the areas affected by the Argentine, Chilean, and Peruvian claims, but the situation changed in 1950 when tuna was

¹⁷ David C. Loring, “The United States-Peruvian ‘Fisheries’ Dispute,” *Stanford Law Review* 23, No. 3 (1971), 391-453, 392.

¹⁸ *Ibid.*, 400.

discovered off northern Peru at the Guayaquil Banks. American fishing boats poured into the area. On Nov. 6, 1950, Ecuador declared a minimum extension of its territorial waters to twelve miles.¹⁹ Ecuador promulgated a further decree on Jan. 29, 1952, prohibiting any foreign fishing vessels from entering, for any purpose, a twelve-mile zone of waters along its coast. The zone included the Galapagos, an important tuna fishing ground for American boats. When three American boats passing through Ecuadorian waters were seized, it prompted the State Department to send a representative to Ecuador to protest.²⁰ Other seizures followed.

The U.S. had responded to the Chilean, Argentine, and Peruvian declarations as if they had claimed sovereignty of the high seas. Legal scholar David Loring argued the U.S. misread the texts of the documents; the declarations were not law, but only decrees. The American protests angered the South Americans, since they considered it intellectually dishonest to differentiate their declarations from the Truman declaration of 1945.²¹ The U.S. had always been the dominant partner in the relationship with Latin and South America; now the countries were uniting in a challenge to the European declaration of open seas. The U.S. was especially sensitive about the allegation that bait stocks

¹⁹ *Commercial Fisheries Review*, October, 1952, 61.

²⁰ Foreign Service Dispatch, Aug. 22, 1952, "Arrival of Fred E. Taylor—Status of *Sun Pacific* and *Equator* seizure cases." NARA RG 59, 611.226/8-2252.

²¹ David C. Loring, "The United States-Peruvian 'Fisheries' Dispute," *Stanford Law Review* 23, No. 3 (1971), 391-453, 401.

were being depleted, a charge that the Americans were quick to deny, saying there was no scientific evidence that stocks were being depleted. However, fishermen had complained since the 1930s that bait stocks were harder to find.

In a 1950 analysis of the tuna industry, Wilbert Chapman had pointed out that the Achilles heel of the tuna fleet was its reliance on bait. Tuna production had doubled, from about 4 million cases in 1941, to about 8.5 million in 1950, and the expansion had come primarily off Latin America by the bait boat fleet. It was theoretically possible that the market could reach 20 million cases a year, but almost all the bait the fleet needed was found within three miles of a foreign country. Chapman conceded that the increased fishing might have affected bait stocks in certain areas. A doubling of the catch “would affect adversely the abundance as well as availability of bait,” at least in some locations.²²

While the Latin American countries claimed, just as the U.S. did, that its expansion of territorial limits was motivated by conservation, the U.S. was skeptical, suggesting that the territorial claims were to raise revenues, not conserve bait stocks.²³ Writing in 1973, economists Bobbie B. Smetherman and Robert M. Smetherman agreed that Peru's rapid development of its anchovy fishery disputed “both the earnestness and the adequacy of its anchovy conservation.”²⁴ They suggested that both Chile and Ecuador wanted to duplicate Peru's anchovy fishery and produce tuna for the American market, indicating that

²² American Tuna Association Files, Box 27, Folder “Fisheries Industries Advisors,” Chapman to the tuna industry, Aug. 9, 1950. Scripps Institution of Oceanography.

²³ *Pacific Fisherman*, June, 1949, 27.

²⁴ Bobbie B. Smetherman and Robert M. Smetherman, “Peruvian Fisheries: Conservation and Development,” *Economic Development and Cultural Change* 21 (2) 1973, 338-339.

Chile, Ecuador, and Peru were more concerned about exclusive exploitation of the fishery resources, not conservation of them, a position that was essentially the same as the American Tuna Association. The Latin Americans undoubtedly wanted a greater share of the wealth that was being taken off their shores, wealth that couldn't be harvested without the local bait stocks. And the same could be said of the U.S.

11.3 The International Tuna Industry

In 1943, the U.S. negotiated a trade agreement with Iceland. It lowered tariffs on a number of items, including fish canned in anything except oil. The tariff rate for these products was set at 12.5%, whereas the normal U.S. tariff on fish canned in oil was 45 %; the Japanese immediately began canning tuna in brine. Imports of tuna in brine increased 2,110 percent between 1950 and 1951, undercutting all other canned tuna on the American grocery store shelves. Cans of brined tuna sold for between 19 and 21 cents a can, compared to up to 37 cents for American tuna canned in oil.²⁵ "The commodity tuna canned in brine did not exist in a commercial sense prior to 1950 and it seems patent to us it was originated for the deliberate purpose of evading the 45 percent tariff on canned tuna in oil," according to a 1952 White House memorandum.²⁶

The second international twist to the tariff situation came in 1948, over imports of bonita, a species of tuna from Peru and Chile. The Latin American

²⁵ *Pacific Fisherman*, March, 1952, 65.

²⁶ White House Central Files, Confidential Files, Box 55, Memorandum on Tuna Import Problem, Jan. 30, 1952, Truman Presidential Library.

industry had been created with American capital, much of it spent during the war when there was a shortage of protein. The tariff had been 30 percent on bonito, but it was reduced to 21 percent in 1948. During the trade negotiations at the 1950 conference at Torquay in England, the tariff on bonito was reduced to 15 percent, over the strenuous objections of the American tuna industry. The amount of bonito imported into the U.S. was steadily increasing, and by 1951, it was 500,000 cases.²⁷ When added to the rapidly growing volume of tuna exported by Japan, the imports eroded the American market and the 260-boat San Diego bait fleet was spending more time tied to the dock than it was fishing.

The American Tuna Association (ATA) reorganized itself in early 1951, hiring Wilbert M. Chapman as its director of research. In theory, Chapman was going to do science: undertake population studies aimed at securing additional information about the spawning habits of tuna, study the baitfish problem, and investigate the improvement of fishing techniques. But Chapman would spend little of his time with the ATA doing science after he moved to San Diego. Instead, this time would be spent on the association's three goals: prod Congress into giving tariff protection, undertake a sales promotion program, and do some research directed at trimming the costs of fishing. Some 90 percent of its boats were tied up at the dock, yet the fleet voted to tax itself to raise \$600,000 a year for the promotion of canned tuna.

One immediate political objective was to block a proposal to cut the tariff on tuna canned in oil, their premium product, from 45 percent down to 22.5

²⁷ *Pacific Fisherman*, March, 1952. 59-65.

percent.²⁸ The campaigns were expensive, but as Chapman put it, “We are going ahead because we are being hurt too badly to stand still.”²⁹ Fishermen staged protests with their boats, the fishermen’s wives in Point Loma organized to support restaurants that served American tuna. Letters poured in to Washington, D.C., urging lawmakers to increase the tariff on canned tuna.³⁰ Eight bills were introduced in Congress, seeking to impose various tariffs on canned tuna. A subcommittee, after two days of hearings in October of 1951, recommended an emergency tariff of three cents on fresh and frozen tuna.³¹ Many in the industry recognized that such a small increase would be easily offset by the lower Japanese labor costs.

11.4 Fish and Foreign Policy

For the domestic tuna industry, the tariff problem was firmly lodged in foreign policy considerations associated with Iceland, Japan, Peru, and Chile. All four countries opposed increasing the tariff on tuna products. The industry wanted Congress to place all categories of tuna under the same tariff, but Congress was unable to act because an article in the Icelandic Trade Agreement required Iceland to agree to the withdrawal of an item. If the U.S. acted

²⁸ Chapman to Jack Kask, Sept. 19, 1951, Box 45, Folder 12. Wilbert Chapman papers, University of Washington Special Collections.

²⁹ Chapman to O.R. Strackbein, Aug. 20, 1951, Box 91, Folder, “National Labor Management Council on Foreign Trade Policy.” ATA files, Scripps Institution of Oceanography.

³⁰ *Pacific Fisherman*, October, 1951. 27-31.

³¹ *Pacific Fisherman*, November, 1951, 21-22.

unilaterally, Iceland could terminate the agreement.³² Moreover, an American economic development mission had suggested Iceland enter the tuna fishery as a way of diversifying the economy. It was a sound economic suggestion, although a dubious biological one, since warm-blooded tuna were seldom found in the cold waters off Iceland.³³

There was no tariff on frozen tuna, because it hadn't existed as a product in 1934 when the tariff rates were initially established. In 1946, Japan exported 4.1 million pounds of frozen tuna into the U.S. The amount doubled in 1947, and doubled again in 1948, and by 1950, frozen tuna imports were 56.7 million pounds.³⁴ At least 30 percent of the American market was being supplied by Japanese tuna, second only to silk in terms of the value of Japanese exports to the U.S.³⁵ The volume of imports had increased so rapidly that the Southern California fleet had little time to respond. Boats were tied up, as the price of albacore dropped from \$350 a ton to \$300.³⁶ The Southern California industry began 1951 with an inventory of three million cases of tuna, depressing the market throughout the year, and cutting down on the amount of fish the canners bought from fishermen.³⁷

The State Department also opposed increasing the tariff on Latin American fish. A new duty might cause unemployment and social unrest in Latin

³² Memo, Carl Corse to Dr. John Steelman, Jan. 30, 1952, "Tuna Canned in Brine." White House Central Files, Box 55, Truman Presidential Library.

³³ Ibid.

³⁴ Wilbert M. Chapman, "The Tuna Import Situation." *Pacific Fisherman*, October, 1951. 27-31.

³⁵ Chapman to Tatsunosuke Takasaki, Dec. 18, 1951, Box 1, Folder 17. Papers of Miller Freeman, University of Washington Special Collections.

³⁶ *Pacific Fisherman*, October, 1951, 27.

³⁷ *Pacific Fisherman*, February, 1952, 25.

America.³⁸ The U.S. was already concerned about the potential for Communism to expand in Latin and South America. Increasing a tariff on wartime allies was not something the State Department was anxious to do.

The Latin Americans were steadily increasing the fees they charged boats to pass through their waters, increasing expenses for the San Diego fleet at a time when its fish was not competitive in its own markets. Ecuador raised fees for the bait boats in March of 1951. Permits for tuna now cost \$200 and had to be used within 100 days, or a second permit was needed.³⁹ Mexico also increased its fees for taking bait, bringing the amount Americans paid to the government to about \$330,000 annually.⁴⁰ In February of 1951, Ecuador also increased its fees, raising the cost of fishing permits from \$7.50 per ton to \$12 per ton.⁴¹ Panama followed suit in December of 1952, pegging license costs to boat size and sharply increasing fees.⁴² Each fee increase made it more difficult for American boats to compete with the Japanese.

The Latin Americans were unhappy at the prospect of a tariff being erected against their fish, especially since the U.S. had wanted the protein so badly during the war. Even three cents a pound had the potential to price Latin American tuna out of the American market. Robert O. Smith, the chief of the U.S. Fishery Mission to Peru, wrote to Chapman in late November of 1951, pointing

³⁸ Memorandum of Conversation, May 15, 1952, Proposed Duty on Tuna Imports, Papers of Dean Acheson, Box 90, Folder "May, 1952." Truman Presidential Library.

³⁹ *Commercial Fisheries Review*, April, 1951, 51.

⁴⁰ Memorandum of conversation, Department of State, Feb. 8, 1952, "American tuna fleet fishing problems off coasts of Central America." NARA, RG 59.611.206/2-852.

⁴¹ Chapman to President of Ecuador, Aug. 15, 1952, Folder, "D.B. Finn, ATA Affair (Osorio) 1952-55." FAO Archives 14 FI 158.

⁴² *Commercial Fisheries Review*, February, 1953, 63.

out that the increase in the Japanese tuna production was a threat to both the U.S. and Peruvian industries. Peru could not compete with Japan; its boats were small and could not fish offshore, while its processing industry had begun in 1940 and did not achieve efficiency until 1946. The fishery was seasonal, with high production costs, and processing capacity was less than 1000 cases daily. Most of the production is bonito, which are smaller than albacore, so handling and processing costs were higher. The U. S. was the only market for Peruvian bonito.

During the war, Peru had severed relations with Germany and Japan and its navy maintained a submarine patrol of its coast. "It is logical for Peru to expect somewhat more friendly treatment than would be accorded to a former enemy," Smith wrote.⁴³ The industry already had the disadvantage of having to pay \$90 a ton to ship bonito to New York.

Now explicitly representing the tuna industry, Chapman responded that increasing the tariff was vital if the American industry was going to survive. Peru was going to get caught in the cross fire, "but I do not see a single thing we can do about it. The industry is now quite truly fighting for its very life. It does not dare to do anything less than its utmost to get this tariff program across, and it cannot concern itself with the minor effect, in the overall picture, of our relations with Peru."⁴⁴

⁴³ Smith to Chapman, Nov. 29, 1951, Box 76, Folder "Peru," ATA Files, Box 76, Scripps Institution of Oceanography.

⁴⁴ Chapman to Smith, Dec. 12, 1951, Box 76, Folder "Peru," ATA Files, Box 76, Scripps Institution of Oceanography.

The troubles multiplied in June of 1951, when the Mexican government announced it would abrogate its 1943 trade agreement with the U.S, which had established a 22 percent tariff on bonito. There would be a six-month delay for the trade agreement to be nullified, when the tariff on tuna canned in oil would go back to 44 percent. Seizing another opportunity, the Japanese escalated their imports into the U.S. Imported tuna had totaled 4.5 million pounds in 1948; by 1950, that had increased to 35.4 million pounds.⁴⁵

11.5 Fish and the Domestic Economy

The Tariff Commission held a series of hearings in early 1952, to assess if imports were damaging the domestic fishing industry, a condition that would have to be established before there could be relief in the form of an increased tariff. According to the ATA's director, Harold F. Cary, the situation threatened the existence of the industry, which consisted of 200 bait boats and another 100 purse seiners that had been forced into tuna after the collapse of sardines.⁴⁶

But the industry was not united in seeking the tariff increases. The Columbia River Packers Association (CRPA), based in Astoria, opposed the bill: since the 1940s, the CRPA had been importing frozen tuna from Japan, processing it in Astoria, and selling it throughout the U.S. The CRPA had gotten into the tuna business when large numbers of albacore had shown up off

⁴⁵ Statement of Harold F. Cary, Committee on Reciprocity Information, December, 1954, Box 18, ATA Files, Scripps Institution of Oceanography.

⁴⁶ Statement of Harold F. Cary, Senate Committee on Finances, Feb. 5, 1952, Box 18, ATA Files, Scripps Institution of Oceanography.

Oregon, Washington, and British Columbia. Salmon trollers could modify their gear and catch large numbers of albacore, and CRPA had reorganized its Astoria plant to can as much tuna as salmon. By 1950, the albacore were gone, and the CRPA negotiated with the Supreme Commander Allied Powers to buy Japanese frozen tuna, which could enter the U.S. with no tariff. Company president Tom Sandoz argued that CRPA was unable to buy its total tuna requirements from Oregon and Washington fishermen, and if the company were to stay in business, it had to be allowed to buy fish elsewhere.⁴⁷

There were also objections from the State Department, concerned that a tariff, even of three cents, would seriously impair Japan's second most important export, and that it would be resented by the Latin Americans, who might retaliate against the tuna fleet, restricting the American freedom of the seas. The Department suggested a compromise, allowing the first 25 million pounds of fresh and frozen tuna into the country without a tariff.⁴⁸

The Japanese government also protested the quota, and announced that it would voluntarily place a quota on its tuna exports to the U.S., effective on May 1, 1952. Exports would be limited to 12,000 tons of raw fish and 1 million cases of canned fish. In return, the Ministry of Trade and Industry asked Congress not to vote on import duties.

Congress passed a bill to place an emergency three-cent a pound tariff on all imports of fresh and frozen tuna, a temporary measure that would last for a

⁴⁷ *Pacific Fisherman*, March, 1952, 15-18.

⁴⁸ *Pacific Fisherman*, March, 1952, 17.

year while the Secretary of the Interior and the U.S. Tariff Commission investigated the situation, with a report due to Congress by Jan. 1, 1953. But the bill was stalled in the Senate; it was not brought to a vote until June 24, when it was soundly defeated by a vote of 43-32. The foreign policy concern of the State Department trumped the domestic pressure from coastal lawmakers. The most the industry could get were orders to the U.S. Tariff Commission and the Department of the Interior, to conduct investigations into the impact of tuna imports on the domestic industry.⁴⁹ In the meantime, Japanese tuna continued to pour into the shelves of American grocery stores.

11.6 The International Events

While the tuna industry had been in Washington, D.C. for the tariff hearings, Chapman and other industry leaders had met with William Herrington at the State Department. Even more serious than the Japanese imports was the territorial question in Latin America. Tuna boats were being seized off Ecuador and Peru, and there was concern that if the tariff was increased, seizures would escalate. The group discussed taking the territorial question to the International World Court and decided a legal analysis of the Anglo-Norwegian decision, which had just been announced, would be useful.⁵⁰

The legal analysis by the State Department found that the decision “greatly complicated” the American territorial waters decision. “I would say... that

⁴⁹ *Pacific Fisherman*, August, 1952, 87.

⁵⁰ Memorandum of Conservation, Feb. 8, 1952. State Department Files, RG 59. 611.206/2-852, NARA.

in certain instances our position is untenable and that in others we're skating on mighty thin ice," legal analyst Fred. E. Taylor wrote to Chapman. The Court had upheld four miles: would it uphold twelve miles, the territorial claim currently being made by the Soviet Union, as well as by some other countries? "You get a twelve mile limit decided against you and the floodgates are open."⁵¹ Every country could start to enclose their waters.

Iceland moved swiftly to reinforce the decision. On March 19, 1952, Iceland promulgated new regulations closing Faxa Bay, an important fishing area, for what it described as conservation reasons. Iceland's coast guard arrested a British trawler on July 19, claiming it was fishing inside the new fishing zone demarcation line.⁵² Iceland's decision expressly linked conservation with enclosure and protection from the distant water fleet.

The International Law Commission issued its recommendations in the summer of 1952. There were three draft resolutions: to create an international authority, under the framework of the UN, to come up with regulations to protect fish resources from waste or extermination on the high seas. The authority's recommendations would be binding.⁵³ The report reflected the Anglo-Norwegian court decision, recognizing Norway's right to set a four-mile territorial sea. The

⁵¹ Fred E. Taylor to Chapman, May 2, 1952, Box 20, Folder 10. Wilbert M. Chapman papers, University of Washington Special Collections.

⁵² *Commercial Fisheries Review*, September, 1952, 34-35.

⁵³ FAO Archives, RG 61-1, Series C3, Nov. 23, 1953.

report recommended a six-mile limit as a reasonable compromise. In other words the Court recognized the need for serious measures to slow fish decline and prevent a war of enclosure. New international law was urgently needed.

The U.S. was skeptical. Chapman believed that the recommendations inadequately reflected the technical problems involved if nations attempted to work together towards marine conservation.⁵⁴ He was also concerned about the U.S. coming under the authority of an international body. During his time at the State Department, Chapman had insisted the U.S. take the lead in negotiating a fisheries treaty in the North Atlantic, rather than agreeing to a process that had been initiated in Europe. Chapman had always been suspicious of FAO, which was trying to organize a Latin American Fisheries Council, a potential threat to the newly-created Inter-American Tropical Tuna Commission, now established at La Jolla and starting to plan its research agenda. FAO planning documents emphasized the role of fishing in providing for good wages to workers in processing plants, a goal the U.S. did not entirely support. In the 1920s, American fisheries managers had thought that other countries would increase wages to American levels. Now it appeared that American wages were threatened by international competition.

An FAO planning group had met in September of 1951 in Lima, and Herrington, who had headed the U.S. delegation, reported there had obviously been prior consultation among the Latin Americans about the issue of territorial

⁵⁴ Stillman Wright, To the Director, Dec. 1, 1955, Box 1 of 8, E 209, Records of Office of International Relations, RG 22, NARA.

limits. Chile's motion had not passed, but Herrington considered the meeting to be ominous. If a measure on territorial limits had passed, at a conference under the sponsorship of the United Nations, it would have meant

that the extension of territorial waters was essential to the conservation of Latin American fishery resources. As such, it would strengthen the hands of Latin American Governments in future attempts to exclude United States fishermen from their waters. It would have further complicated the work of the State Department in over-riding such claims, while striving to maintain over-all friendly relations between the United States and Latin America.⁵⁵

Both Chapman and Herrington saw the law commission as fuel for the Latin Americans, who would be sure to attempt to restrict American fishing. Chapman was particularly troubled by the decision and began to alert the West Coast fishing industry. On Oct. 21, 1952, he wrote to Seattle attorney Edward Allen: "I want in particular to scotch the recommendation of the International Law Commission to establish FAO as a world regulatory body and wish to do this in the body of a more comprehensive report covering this whole subject," Chapman wrote. "Why don't we take the initiative and see if we can't force the Department's hand a bit?"⁵⁶

⁵⁵ Herrington, Memo to the Latin American Fishery Advisory Committee, Oct. 8, 1951, Box 1437, Folder 398.03-FAO/10-851, RG 59, NARA.

⁵⁶ Chapman to Allen, Oct. 24, 1952, Box 21, Folder 52-58. Papers of Edward Allen, University of Washington Special Collections.

11.7 The U.S. Tariff Commission Report of 1953

The U.S. Tariff Commission issued its report on March 23, 1953.⁵⁷ It declined to issue recommendations, but it drew a number of conclusions. The Commission was not sympathetic. Many domestic industries had to adjust to imports from abroad. Sales of tuna were projected to continue to increase, and commercial tuna fishing was an entrepreneurial activity that involved greater risk than most other domestic enterprises.⁵⁸ The economies of two allies, Japan and Peru, depended on access to the American market. The Commission decided that the imports had not caused serious injury to the industry. A dissenting statement came from the Commission's Chairman, Walter F. George of the Senate Committee on Finance, who said the report should have been delayed until a more thorough investigation could be made.⁵⁹ But that was all.

A further tariff commission decision came in June of 1953, involving East Coast groundfish. The New England fleet had also argued that the imports threatened the complete destruction of their industry. The Commission recommended that tariff on imported groundfish fillets be raised from 1 7/8 cents a pound to 2 1/2 cents.⁶⁰ There was a storm of reaction.

The Canadian government protested that increasing the tariff could have serious consequences, not only for trade, but for the overall relationship between

⁵⁷ *Commercial Fisheries Review*, April, 1953, 74-77. *Tuna Fish—Report on Investigation Conducted Pursuant to a Resolution by the Committee on Finance of the United States*

⁵⁸ *Ibid*, 76.

⁵⁹ *Ibid*, 77.

⁶⁰ Margaret E. Dewar, *Industry in Trouble: The Federal Government and the New England Fisheries* (Philadelphia: Temple University Press, 1983), 48.

the two countries.⁶¹ The Foreign Operations Administration weighed in, warning that the operation of U.S. bases in Iceland depended on the goodwill of the nearby fishing communities; Iceland had recently signed a trade agreement with the Soviet Union. The State Department said there was no justification for a quota or a tariff. Either action would “conflict with our military security system to some extent in Norway, more in Canada, and worst of all in Iceland...As one Icelandic official has put it, in commenting on the Tariff Commission’s proposal, ‘Iceland cannot live on military agreements alone.’”⁶²

The ultimate decision was made by President Eisenhower, who declined to increase the tariff. While he recognized the pain within the industry, he saw expanding markets for fish products as the way to solve the industry’s problems. Since the tariff commission had decided to study the issue, the demand for fish sticks had greatly increased, perhaps bringing about an increase in American per capita consumption of fish, a figure that had held between 10 and 12 pounds per person for almost fifty years. Increasing the tariff would reduce the supply of raw material for fish sticks, hampering the development of this promising new market. Expanding the market for fish sticks “appears to hold the best prospect for a vigorous, healthy domestic industry that also best serves our international relations.”⁶³ At the same time, Eisenhower pledged additional assistance to the industry, with research in fishing technology, conservation, and marketing. When

⁶¹ White House Central Files, Box 786, Folder 149-B-2 Fish (1).Eisenhower Library.

⁶² Subject Series, Box 94, Folder “Trade Agreements and Tariff Matters, Fish (1),” Subject Series, Eisenhower Presidential Library.

⁶³ Eisenhower to Millikin and Reed, June 25, 1953, Box 786, Folder 149-B-2 Fish (1), White House Central Files, Eisenhower Presidential Library.

domestic considerations were harmed by foreign policy decisions, Eisenhower sought relief, a policy that was to have substantial repercussions for the industry and the fish they depended on.

Fish sticks were indeed popular. Demand was so great during 1953 that producers were unable to keep up with orders, and a number of new companies started making the pre-cooked, breaded food. During the first quarter of 1954, production rose to 9 million pounds of fish sticks and the U.S. Fish and Wildlife Service estimated that output would exceed 40 million pounds. "Consumer acceptance of fish sticks has been so widespread that some sources expect them to do for the fishing industry what fruit juice concentrates have done for the citrus fruit trade."⁶⁴

With tariff relief opposed by the State Department on national security grounds, and President Eisenhower refusing to act, it was a difficult time for the industry. The American Tuna Association ran out of money in 1953. Fishermen, processors, and the unions formed a new group, the Tuna Council of the Americas, to deal with the ongoing crisis in Latin America.⁶⁵ The industry was able to persuade Congress to pass the Fisherman's Protective Act of 1954, authorizing the secretary of state's office to secure the release of seized vessels and crew, and reimbursing fishermen for fines paid to Latin American governments. The act was strengthened in 1968 to allow the secretary of state to

⁶⁴ *Commercial Fisheries Review*, July, 1954, 36.

⁶⁵ Wilbert M. Chapman, "Prepared for Presentation at the Third Annual Conference of the Law of the Sea Institute, June, 1968, University of Rhode Island. On the United States Fish Industry and the 1958 and 1960 United Nations Conference on the Law of the Sea," 5.

withhold foreign aid from countries seizing and fining American boats.⁶⁶ The bill was, in effect, a direct subsidy to the tuna industry, aimed at maintaining the Cold War objectives of keeping American fishing boats on the high seas.

11.8 The Santiago Declaration of 1952

The looming threat to American fisheries intensified in August of 1952 at a meeting in Santiago, when Chile, Ecuador, and Peru acted decisively to assert wider territorial limits. The South Pacific Fishery Conference drew delegates from all three countries, with Colombia sending an observer. They voted to establish a permanent commission to oversee fisheries in the territorial waters of the participating nations. The new commission would have authority to undertake technical investigations and make recommendations to governments, to restrict fishing, and to establish quotas, prohibited areas, and closed seasons.⁶⁷

Chile's motivating concern was protection from a fleet of Soviet whaling ships that was operating outside the territorial boundaries set by the International Whaling Commission. But Peru and Ecuador were concerned about American tuna boats in their waters.⁶⁸ While the initial thrust of the new commission was to

⁶⁶ Michael Weber, *From Abundance to Scarcity: A History of U.S. Marine Fisheries Policy* (Washington, D.C.: Island Press, 2002), 62.

⁶⁷ Report from Santiago Embassy to State Department, Aug. 20, 1952. NARA, RG 59, 398.245-SA/8-2052.

⁶⁸ Foreign Service Despatch, Santiago Embassy to State Department, Sept. 5, 1952. NARA, RG 59, 398.245 SA/9-552

regulate whaling, the Santiago Declaration expanded the concept of territorial waters. All three countries were acting to exclude not only American boats, but Japanese and European ones as well.

In their comprehensive account of the history of modern whaling, J. N. Tonnessen and A. O. Johnsen wrote that the Santiago conference was prompted by a 1950 decision by the International Whaling Commission not to support conservation measures proposed by Chile. Chile had wanted regulations that were more restrictive than those proposed by the International Whaling Commission: a 30-foot minimum size limit for sperm whales, the suspension of time limits for harvesting baleen whales from shore stations, and suspension of a rule setting a minimum distance of 1,000 km between shore stations. The Santiago conference resolved that "every single state shall have the right to establish a protection, control, and exploitation zone a distance of 200 nautical miles from such countries' coasts and islands, within which area they can individually exercise military, administrative, and physical jurisdiction." The precedent was the 1833 British proclamation of sovereignty over the continental shelf and adjacent ocean areas of the Falkland Islands.⁶⁹ Chile's purposes were also outlined in a Foreign Service Despatch from Lima, confirming that Chile was concerned about excessive whaling activities off its coast.⁷⁰

⁶⁹ J.N. Tonnessen and A.O. Johnsen, *The History of Modern Whaling*, translated by R.I. Christophersen, (London and Canberra: C. Hurst & Company and Australian National University Press, 1982), 554.

⁷⁰ Foreign Service Despatch, Aug. 28, 1952. NARA, RG 59. 398.245-SA/8-2852

The conference closed with a speech by Peruvian delegate Julio Ruiz, who laid out a vision of increased well-being, based on an expanded harvest from the sea, “which contain a single biological environment of minerals, flora, and fauna.”⁷¹ It was an early formulation of a concept the three countries would advance in 1955, of a “biomass” theory that united all life on the coastal zone with the living communities of the sea.⁷² Ruiz said fishing by foreign fishermen threatened the development of a fishing industry in Peru by unethical conduct, and similar abuses were occurring off Colombia and Ecuador, where foreign boats were being seized with illegal catches of fish. Ruiz laid out an ambitious agenda, of establishing marine biological stations, coordination of scientific investigations, establishing measures for conservation, and a preferential consideration for domestic industries to supply local markets.

Within days of the conference, Peru reported that one of its fishing vessels had been attacked with firearms by an American tuna clipper 30 miles off the Peruvian coast near the port of Mancora. The Peruvian fishing boat was owned by Wilbur-Ellis, an American company based in San Francisco. According to the American Embassy dispatch from Santiago, the newspaper *La Prensa* covered the incident heavily, and supported lawmakers who wanted to extend territorial limits.⁷³ The Embassy staff was kept busy translating a steady stream of

⁷¹ Translation, Report from Santiago Embassy to State Department, Aug. 20, 1952. NARA, RG 59, 398.245-SA/8-2052.

⁷² U.S. State Department, *Santiago Negotiations on Fishery Conservation Problems*. (Washington, D.C.: The U.S. State Department, 1955, 9.

⁷³ Foreign Service Despatch, Santiago to State Department, Aug. 28, 1952. NARA, RG 59, 398.245-SA/8-2852.

newspaper articles and editorials, chronicling how much fish the American boats were harvesting off Latin America. The campaign embarrassed the Peruvian government, which was seeking closer ties with the U.S.⁷⁴ The allegations of overfishing embarrassed the Americans as well.

11.9 Herrington's Principle of Abstention and Latin America

The U.S. went on the offensive against the Latin American claims. Herrington fell back on the Principle of Abstention, which he had forced the Japanese to accept as part of the 1952 Tripartite Treaty. In an account of this period, written in 1989, Herrington said that when he returned from Japan in 1951, he had discussed with Wilbert Chapman the difficulty the State Department was having in coming to a position over Japanese fishing. Herrington thought it might be possible to get countries to agree to waive their fishing rights in certain conditions, an early formulating of what he came to call the Principle of Abstention. Herrington was able to get John Foster Dulles, who negotiated the peace treaty with Japan, to agree to the principle.⁷⁵ It was the key rationalization used to keep the Japanese fishery 600 miles west of Bristol Bay.

Herrington gave a different account in a speech to the University of Rhode Island on June 27, 1966. He said that during 1954, several people in the State

⁷⁴ Foreign Service Despatch, Santiago to State Department, Sept. 24, 1952. NARA, RG 59, 398.245-SA/9-2452.

⁷⁵ William C. Herrington, "In the Realm of Diplomacy and Fish: Some Reflections on the International Convention on High Seas Fisheries in the North Pacific Ocean and the Law of the Sea Negotiations.," *Ecological Law Quarterly* 16, no. 1 (1989)., 103.

Department thought that instead of taking a negative attitude towards the International Law Commission recommendations, it would be more productive to get the Commission to consider several “newer” concepts. It was widely felt within the Department that when the U.S. became involved in broad international deliberations, it usually lost more than it gained. The issue was discussed with the Department’s Fishing Industry Advisory committee, and a decision made to see what international support could be found for the American position of maintaining the freedom of the seas and the three mile limit.⁷⁶

The “newer” concept that Herrington pushed was the principle of abstention, the line that the U.S. had drawn in the ocean to prevent the Japanese from catching American and Canadian salmon. In Herrington’s formulation, when a country had carried on extensive scientific study of a fish stock, and on the basis of scientific findings regulated the exploitation of the stock and limited fishing, then other states should voluntarily waive the right to participate in that fishery. The principle would encourage countries to do research and manage their fisheries on a scientific basis, but it would not exclude other countries from fishing an unused or underused stock.⁷⁷ It was essentially Cordell Hull’s formulation from 1936, that when a fishery was fully utilized (such as Bristol Bay sockeye), and managed for conservation, the financial sacrifice and burden of conservation would be wasted if other fishermen were allowed access to the fish.

⁷⁶ William C. Herrington, speech, University of Rhode Island, June 27, 1966, Box 29, Unlabeled Folder, ATA Files, Scripps Institution of Oceanography.

⁷⁷ William C. Herrington, "In the Realm of Diplomacy and Fish: Some Reflections on the International Convention on High Seas Fisheries in the North Pacific Ocean and the Law of the Sea Negotiations.." *Ecological Law Quarterly* 16, No. 1, (1989), 103.

Chapman had carried this idea forward in the High Seas Fishery Policy of 1949, declaring that the Alaskan salmon fisheries were “mature,” and could not withstand further fishing pressure. Herrington re-stated Hull’s formulation to emphasize more clearly that the American actions were grounded in science. If a state would voluntarily waive its right to fish on this scientifically-managed stock, then protection could be achieved without setting a legal precedent that could be used against the tuna fleet by the Latin Americans. The Principle of Abstention resulted in enclosure that wasn’t called enclosure. It also stacked the deck in favor of countries with scientific capabilities. And while Herrington proposed Abstention as being voluntary, the Japanese had been forced to accept the principle and a line in the water that kept them 600 miles off Bristol Bay.

Herrington was preparing for negotiations with Ecuador, where the U.S. wanted its fishing boats to be able to navigate freely through Ecuadorian waters. Ecuador, Peru, and Chile were planning another meeting and would likely try to expand the Santiago Declaration of 1952. Herrington was advised to tactfully suggest that the “adoption of exaggerated claims of Jurisdiction are likely to be as unacceptable to most maritime nations as they would be to the United States and would not appear to serve any purpose other than to complicate the existing situation.”⁷⁸

⁷⁸ Department of State, Smith to Herrington, March 16, 1953, Box 2758, Folder 611.226/3-1353. RG 59, NARA.

Chapman had not been the only one to see an opportunity with the recommendations of the ILC. Herrington saw another potential application for his Principle of Abstention. He had been pondering what would happen if the North Pacific convention expired, because

it was the only document in which the 'principle of abstention' had been mentioned. If left at that, it would be considered only a gimmick to achieve Japanese exclusion from certain U.S. and Canadian fisheries. I considered abstention a sound concept that encouraged better research, management, and use of the sea's living resources. If we staged a campaign to modernize international law on fisheries we could include 'abstention' in our proposals.⁷⁹

Abstention was controversial within the American fishing industry. To Chapman, it was too close to what the Latin Americans and the ILC called the "principle of exclusion of third parties." Writing in 1968, also in hindsight, Chapman said the principle caused a "parting of the ways in the Pacific Coast fish business."⁸⁰ The salmon and tuna industries could no longer align their interests and their political strength. What was necessary for the salmon industry would greatly harm the tuna industry.

The trend towards broadening territorial limits was seriously threatening American tuna fisheries, as well as overall American foreign policy objectives in

⁷⁹William C. Herrington, "In the Realm of Diplomacy and Fish: Some Reflections on the International Convention on High Seas Fisheries in the North Pacific Ocean and the Law of the Sea Negotiations.." *Ecological Law Quarterly* 16, No. 1, (1989), 112.

⁸⁰ Wilbert M. Chapman. "Prepared for Presentation at the Third Annual Conference of the Law of the Sea Institute, June, 1968, University of Rhode Island. On the United States Fish Industry and the 1958 and 1960 United Nations Conference on the Law of the Sea." 5.

the escalating Cold War with the Soviet Union. The Principle of Abstention offered a way for the U.S. to build on its claim of acting for conservation reasons, while doing little to restrain its own distant water fleet.

The controversy over territorial claims escalated sharply in late August of 1954, when the illegal whaling ship *Olympia Challenger*, owned by Aristotle Onassis, and its fifteen catcher boats, arrived off Peru to challenge the Santiago Declaration. "The whaling pirate Onassis insists on disregarding our national sovereignty," Peru's leading newspaper, *La Nacion*, declared. "This will not be tolerated...His ships must be seized by our navy."⁸¹ Onassis was already embroiled with the International Whaling Commission for whaling out of season, with the ships registered in Panama. But he was making a lot of money, since the start of the Korean War had increased the price of whale oil.

Peru sent two cruisers to establish a threatening presence at sea. The Onassis vessels *Olympic Victory* and *Olympia Conqueror* were boarded and escorted to Peru. Peruvian planes spotted the *Olympia Challenger* and ordered it to head for the coast. Instead, as it headed away at top speed, shots were fired into the water around it. "We are being attacked and strafed by Peruvian planes," the captain radioed to Panama. The vessel surrendered and a Peruvian maritime court established that between 2,500 and 3,000 whales had been caught within Chilean territorial limits and imposed a fine of \$3 million, to be paid within five

⁸¹ Nicholas Fraser, Philip Jacobson, Mark Ottoway and Lewis Chester, *Aristotle Onassis* (London: Times Newspaper Limited, 1977), 123.

days or the ships and cargo would be sold at auction.⁸² The fleet was insured by Lloyd's of London, with potential liability of \$14 million, which drew Britain into the territorial disagreement.⁸³ Lloyd's paid the fine and the vessels were released. Onassis later sold his entire whaling fleet to Japan for \$8.5 million. The *Olympia Challenger* was renamed the *Kyokuyo Maru II*.⁸⁴

11.10 The Caracas Conference

The Onassis incident highlighted the attempts by the Latin Americans to prevent the overharvest in their waters. At the 10th Inter-American Conference in Caracas, Venezuela in early 1954, Ecuador proposed to adopt a 200-mile rule for the territorial sea in Latin America. The U.S. Ambassador, William Sanders, working with Garcia Amador of Cuba, managed to prevent the motion from coming to the floor for a vote. "If it had come to a vote it would win by 19 to 2..." Chapman later wrote. "The only two opposing nations were Cuba and the United States"⁸⁵

Ecuador, Peru, and Chile had been unable to get a vote on their territorial motion at Caracas, but they continued to move forward. The special meeting of

⁸² J.N. Tonnessen, and A.O. Johnsen, *The History of Modern Whaling*, trans. R. I. Christophersen (London and Canberra: C. Hurst & Company and Australian National University Press, 1982), 556.

⁸³ Nicholas Fraser, Philip Jacobson, Mark Ottoway and Lewis Chester, *Aristotle Onassis* (London: Times Newspaper Limited, 1977), 123.

⁸⁴ J.N. Tonnessen, and A.O. Johnsen, *The History of Modern Whaling*, trans. R. I. Christophersen (London and Canberra: C. Hurst & Company and Australian National University Press, 1982), 556.

⁸⁵ Wilbert M. Chapman, "Prepared for Presentation at the Third Annual Conference of the Law of the Sea Institute, June, 1968, University of Rhode Island. One the United States Fish Industry and the 1958 and 1960 United Nations Conference on the Law of the Sea." 5.

the Permanent Commission on Exploitation and Conservation of the Marine Resources of the South Pacific was held at Santiago, on Oct. 4-8, 1954. The delegates from Peru, Chile, and Ecuador unanimously approved a number of resolutions that had been prepared by three working committees on judicial, administrative, and economic questions. Since some of the resolutions exceeded the authority of the Permanent Commission, it was decided to convene another conference at Lima on Dec, 1, 1954,⁸⁶

The purpose of the Lima meeting, according to the American Embassy in Lima, was to draft an international fisheries convention that would be voted on at a meeting in Santiago during 1955. The Ambassador recommended a strong and clear statement of American views, since the adoption of a convention will “add a judicial character to their pretensions.”⁸⁷

The Lima meeting passed three conventions; a 200-mile declaration of sovereignty, measures to exercise control over the maritime zone, and a provision to issue licenses for exploiting the marine resources in the zone. Other resolutions called for using the fees collected from fishing licenses to set up marine biological stations for technical and scientific research. In a translation from *La Nacion*, the Peruvian foreign minister, Dr. Aguilar Cornejo, was quoted as saying it was fitting that the world recognize that Latin America “is perfecting

⁸⁶ *Commercial Fisheries Review*, January, 1955, 39-41.

⁸⁷ State Department Memorandum, Dec. 2, 1954, Tripartite Conference in Lima on Exploitation and Conservation of Maritime Resources of the South Pacific, Box 1573, 398.245-LI/12-254, RG 59, NARA.

its own laws related not to archaic concepts but to the obligations to protect social interests and prevent exploitation of natural resources by capitalistic interests for the benefit of the few to the detriment of the many.”⁸⁸ The Latin American declaration claimed the conservation high ground and painted the U.S. as ignoring conservation and exploiting the Latin American countries.

Both Herrington and Chapman believed that if another conference went forward in 1955, the U.S. would not be able to prevent the creation of a regional 200-mile limit. That would complicate American tuna fishing, but more seriously it might be used as a precedent elsewhere in the world to restrict American activity on the high seas. If the meeting were to go ahead, Herrington wanted it to happen within an arena more favorable to American interests. The obvious choice was the United Nations, and the vehicle for taking control of the Latin American conference was the International Law Commissions and its 1953 recommendations. The U.S. would attempt to outflank its Latin American opponents, by moving the issue to a global forum where the American position would receive more support from other distant water nations.⁸⁹ Once that was accomplished, the U.S. could move forward with shaping an agenda that would maximize its opportunities to achieve its objectives.

⁸⁸ Foreign Service Despatch from Lima, Dec. 2, 1954, Box 1573, 398.245-LI/12-254, RG 59 NARA..

⁸⁹ Ann Hollick, “The Roots of U.S. Fisheries Policy,” *Ocean Development and International Law Journal* 5 No. 1 (1978), 61-105, 84.

11.12 The Conference in Rome

Events in Latin American were moving quickly. The U.S. was concerned that Chile, Peru, and Ecuador were creating a regional agreement that would challenge the international law of the freedom of the seas. Even if the draft international convention were not ratified, it was obvious that American tuna boats would continue to be targeted by all the three nations. But while the U.S. position was that its fishing boats, like its planes and submarines, had the right of free passage on the high seas, the fishing industry was not united on a single position. The recommendations of the ILC offered a vehicle for shaping a new high seas regime that would be more in favor with American interests, but Herrington bluntly told the fishing industry that he could not move forward at the United Nations without the full backing of the industry. According to Chapman's version of events, Herrington's strategy was to sell the Principle of Abstention internationally and he could not do it if factions within the industry did not support him. The tuna industry did not believe that a majority of nations would vote to accept the Principle of Abstention, but the present situation in Latin America was not acceptable.⁹⁰ The industry had no choice but to swallow the Principle of Abstention, with all of its dangers, just as the Japanese had been forced to do, and back Herrington in this high-stakes global game.

The ILC, in its 1953 draft recommendations, wrote that high seas fisheries were of "a technical character; as such it is outside the competence of the

⁹⁰ Wilbert M. Chapman. "Prepared for Presentation at the Third Annual Conference of the Law of the Sea Institute, June, 1968, University of Rhode Island. On the United States Fish Industry and the 1958 and 1960 United Nations Conference on the Law of the Sea." 6.

Commission.” It recommended that a specialized body, such as the FAO, be consulted to investigate the matter and prepare resolutions for the United Nations. In the fall of 1954, the Americans placed a proposal on the UN agenda to convene a joint technical and legal conference to seek agreement on international rules for dealing with the high seas fisheries. The ILC had done an excellent job in laying out a strategy for dealing with high seas fishing claims, but the U.S. did not think it was practical. The U.S. billed its proposal for an international conference as opening the way to an international agreement on the freedom of the seas. The issue was framed as a response to the “grossly exaggerated” claims of the Latin Americans, who were using fisheries as “a pretext to cover up a desire for territorial expansion.”⁹¹

The United Nations General Assembly referred the American proposal to its legal committee, which was chaired by Cuban ambassador Garcia Amador. The U.S. picked up on the law commission’s recommendation that fisheries were of a technical nature, and agreement should be sought upon the principles of international fisheries conservation. The present situation, which the U.S. conceded was in a condition approaching anarchy, was unacceptable.⁹² The U.S. position was that fishing could be considered separately from territorial questions. If a conference were held, it should be restricted to the fishery questions brought up by the law commission report, not deal with territorial

⁹¹ *The New York Times*, “U.S. for U.N. talks on Fishing Rights.” William James, Oct. 6, 1954.

⁹² in support of proposed resolution on fisheries , Box 23, Folder, “U.N. International Technical Conference on the Conservation of the Living Resources of the Sea.” Papers of Edward Allen, University of Washington Special Collections,

claims. The conference needed to happen soon, as it was “highly desirable” to forestall Latin American attempts to develop “fragmented or regional International Laws.”⁹³

A recommendation eventually went forward to the UN as a whole to convene an international technical conference. Resolution 900 (IX) was adopted by the 512th plenary meeting of the General Assembly, passed by one vote on Dec. 14, 1954.⁹⁴ The conference would take place in Rome and be hosted by the FAO. It was scheduled for April, so its recommendations could be forwarded to the International Law Commission, meeting in Geneva in June.

11.13 The Freedom of the Seas

Throughout the period after World War II, fishing represented a front line in foreign policy considerations. The freedom of the seas was important to many nations as the Cold War deepened, including the U.S., Britain, the USSR, and Japan. Smaller nations also wanted to keep the fish resources off their coasts to themselves, just as the U.S. wanted to keep its most valuable fishery from the Japanese.

The high seas were shrinking, not only because the expanded fishing to new areas of the oceans and the development of techniques to catch new stocks of fish, but because trade and economic issues drew fishing and non-fishing countries together. If the high seas and its fisheries had ever been a commons,

⁹³ William C. Herrington, speech, University of Rhode Island, June 27, 1966, ATA files, Box 29, Unlabeled folder.

⁹⁴ Ibid.

that commons was rapidly disappearing. But it did not because of greed on the part of individual fishermen, but because smaller nations saw enclosure as their only tool to protect themselves from the distant water fleets of the larger nations. Fisheries were a tool to achieve foreign policy objectives, involving the rights to territorial expansion, and to exploit rich fishing resources.

The U.S. had replaced Japan as the leading distant water fishing nation in the Pacific. The San Diego tuna clippers were steadily expanding their fishery for tuna, drawing accusations that they were depleting local bait stocks off Latin America. The seizure of American boats continued, off Mexico, Costa Rica, and Ecuador. The accusation that Americans were depleting bait stocks was resented by the Americans, who, as we have seen, thought of themselves as conserving stocks and fishing under scientific strategies. They insisted the Latin Americans were after "tribute," not fishery conservation, and protested the harassment of their boats fishing the high seas.⁹⁵

"Mutual distrust, a compelling desire for security, interest in the rights of navigation by sea and by air, a sense of the need to conserve fish and mineral resources in and under the sea, the hope of increased revenues, simple jingoistic feeling--all of these drives and others contribute to mounting tension," wrote Teruo Kobayashi in his analysis of this period.⁹⁶ The three-mile limit, backed by British naval authority, had been taken up by the United States after the war.

⁹⁵ *Pacific Fisherman*, June, 1949, 27.

⁹⁶ Teruo Kobayashi, *The Anglo-Norwegian Fisheries Case of 1951 and the Changing Law of the Territorial Sea*. University of Florida Monographs, No. 26, Spring, 1965.(Gainesville: University of Florida, 1965), 1.

Three miles had been accepted as the minimum territorial limit since the eighteenth century. Now the battle was to establish the maximum limit of a country's territorial sea. Fisheries would be in the forefront of the conflict, as nations moved to enclose their fishery resources to prevent exploitation by outside boats.⁹⁷

⁹⁷Ibid, 9.



Illustration 7: Dr. Milner B. Schaefer, courtesy of the Scripps Institution of Oceanography.



Illustration 8: William Herrington, right, with Howard Schuck. Photo courtesy of University of California, Berkeley, School of Law.

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Chapter Twelve

The Impeccable Conservation Science

The diplomatic preparation included the construction of an acceptable agenda that would start with impeccable conservation science and lead step by step to the obvious need for constructing international machinery that would provide for regulation of fishing effort when it was needed for conservation purposes and permit freedom of fishing on the high seas when regulation for conservation purposes was not needed.¹

Wilbert M. Chapman, 1968

By 1955, ten Latin and South American countries had declared some sort of expanded jurisdiction, from Mexico's claim of nine miles, to Argentina and Panama claiming the continental shelf, to the 200-mile claims of Chile, Peru, Costa Rica, El Salvador, Honduras, Ecuador, and the Dominican Republic. The U.S. had formally protested the claims and reserved its right of free passage on the high seas, but that right looked increasingly imperiled. Iceland and Norway were seeking to restrict British high seas trawling. The Soviets claimed a twelve-mile jurisdiction and were seizing Japanese boats in the Pacific and European ones in the Barents Sea. Korea was also seizing Japanese fishing boats that violated its territorial claims.

The territorial claims had already involved violence, with the Peruvian navy arresting the Onassis whaling motherships, and shots being fired at American tuna boats. With Ecuador, Peru, and Chile moving to establish a

¹ Wilbert M. Chapman. "Prepared for Presentation at the Third Annual Conference of the Law of the Sea Institute, June, 1968, University of Rhode Island. On the United States Fish Industry and the 1958 and 1960 United Nations Conference on the Law of the Sea."

regional 200-mile zone and claiming the right to seize boats that violated it, William Herrington wrote that it was becoming more likely that such claims would be dealt with by force:

The differences cut across the free world countries; the argument between the U.K. and Iceland, affecting NATO; the Japan-Korea fishery jurisdiction question, affecting cooperation in the Far East; and growing differences between the U.S. and certain Latin American countries, disturbing relations in the Western hemisphere.²

These issues came to a head at the Rome conference in April and May of 1955. The International Technical Conference on the Conservation of the Living Resources of the Sea was about more than conserving fish: national security, naval, maritime, and air transport could all be adversely affected by territorial restrictions aimed at enclosing fish stocks from distant water fleets. The conference was described as being held to settle scientific and technical issues, but delegations were headed by government representatives, not by scientists.

There were extensive government-to-government negotiations over the positions that would be taken at the conference. Some five months before the Americans asked the United Nations, in December of 1954, to hold a technical conference to look at fishery conservation issues, the Americans had started to meet with their British counterparts to discuss a draft proposal for fisheries on the continental shelf. William Herrington had proposed draft language that coastal states would be prohibited from interfering with scientific research other nations

² Memorandum from William C. Herrington, U.S. Position Relative to International Fisheries Conservation Principles, March 13, 1955 NARA, RG 59, Box 1538, Folder 398.245/4-1355.

might be conducting on the continental shelf.³ Under Herrington's scenario, fishing could continue, if the boats were engaged in fishery research.⁴ The proposal was clearly aimed at using the guise of scientific research to gain access to the coastal waters, even if smaller coastal states were successful in setting up their own management regimes.

Herrington, with his degree in zoology from Stanford University, certainly wore two hats during these negotiations. He saw the conference as crucial to U.S. political principles:

It will be the task of the U.S. delegation to bolster the declining case for the three-mile limit by the forceful and logical presentation of the fishery conservation principles for which the U.S. stands. In their simplest form, these are that high seas fisheries can be protected from overfishing by appropriate agreements between the states concerned, necessitating no claim of ownership to the waters in which the resource is found.⁵

Herrington saw the U.S. as the underdog, fighting to uphold an important principle (freedom of the seas) and struggling to impose scientific conservation on countries that were only interested in catching fish (Japan) or extorting tribute from American boats (Latin America).

During the months leading up to the Rome conference, the scientific considerations about how fisheries should be managed were increasingly subsumed by political considerations. In fact, during a Jan. 29, 1955 meeting in

³ Record of Anglo-American Discussions on the Continental Shelf and Fishery Problems, Foreign Office, July 22, 1954, FO 371/115380, British Archives.

⁴ The Japanese continue whaling, under the guise of scientific research.

⁵ Memorandum, W.F. Looney to Mr. Kissick, March 11, 1955, Box 1538, Folder 398.245, RG 59, NARA.

New York to plan the conference, a British Foreign Official suggested that a proposed agenda item on the science at the Rome meeting be omitted, because it might cause the conference “to become involved in lengthy and irrelevant debate on scientific details, but the fishery experts attached importance to it.”⁶

The objectives of the Rome conference were political, but the vehicle for achieving them was science, and all that was implied in the American policy of Maximum Sustained Yield. Under the leadership of the U.S, the rich fishing nations of the world were attempting to solidify their claims to fish caught off the shores of poorer nations, which sought enclosure as a way to preserve fish so that native fisheries could develop. The key move involved the burden of proof. The Rome conference allowed fishing to continue until scientists could *prove* that overfishing had occurred; it was only then that restrictions such as mesh sizes, area closures, and time closures could be introduced to lower the catch. Then fishing would continue, but at a lower level, until stocks recovered their productivity. Fish stocks were seen as essentially resilient, stable populations, able to sustain consistently high harvest levels. British scientist E.S. Russell had suggested that fishing by man was a special kind of predation on fish populations, but his view was by no means accepted.

The Rome conference cemented disparate objectives--biological, economic, political, and social-- into the fundamental framework of today's modern fisheries management. While the meeting was billed as a technical

⁶ United Kingdom Delegation to the United Nations, Jan. 19, 1955, No. 1274/16/55, FO 371/115380, British Archives.

conference, it was expressly political. This would have a profound impact on the development of fisheries regulation, and on global fish populations in the years to come.

12.1 *On the Dynamics of Exploited Fish Populations*

Much had happened in advancing fisheries science since the end of the war. The most significant work was being done at Lowestoft, the British fisheries laboratory headed by Michael Graham. Graham had put two young researchers, Raymond Beverton and Sidney Holt, to work on what he saw as the principal problem for scientists: predicting the effect that fishing was having on fish. What was the effect of changing fishing gear on a given fish population? “The time was evidently ripe for a thorough analytical treatment of the subject, sufficiently good to make use of all existing information,” Graham wrote in the preface to what would become, when it was finally published in 1957, *On the Dynamics of Exploited Fish Populations*.⁷ As fishing was becoming more complicated, managers needed to know how changes in mesh sizes interacted with the behavior of the fish, the effects fishing was having of thinning the stocks, and how this varied the rates of reproduction and survival, “to determine what effects

⁷ Michael Graham, *Preface, On the Dynamics of Exploited Fish Populations*, by Raymond J. H. Beverton and Sidney Holt. (London: Chapman and Hall, Facsimile Reprint, 1992.) 5.

are of a major order and what minor, and to estimate, for the industry and for government, the magnitude of the benefits that can be achieved by conservative fishing.”⁸

Utilizing the vast collection of data accumulated by British scientists since the 1880's, Beverton and Holt developed a series of theoretical methods to study the dynamics between plaice, haddock, cod, sole, and the fishermen who caught them. They expected to find that the survival rates of the main demersal species in the North Sea had increased substantially during World War II. They did find that stocks had responded favorably, but their 1949 analysis showed that stocks were declining rapidly under the renewed onslaught of fishing. The survival rate for plaice, for example, was at least as low as it had been in 1937 to 1939, when the stocks were fished heavily.

.While the entire monograph was not published until 1957, their work had received wide distribution in the science community well before the book appeared.⁹ Beverton had discussed these preliminary conclusions during a conference in 1947 on British Food Needs and Resources. He lectured on the conclusions at the U.S. Fishery Laboratory in Beaufort, N.C. in 1951, and at an ICES meeting in Copenhagen in 1952. The North Carolina lectures were published in a limited edition in 1954.¹⁰ In a 1994 interview, Beverton said the delay in publication was due to the complexity of the manuscript, more than 500

⁸ Ibid, 5.

⁹ Sidney Holt, personal communication.

¹⁰ Raymond J.H. Beverton and Sidney J. Holt. *On the Dynamics of Exploited Fish Populations*. (London: Chapman and Hall, Facsimile Reprint, 1993). 7.

pages, which required detailed typesetting. The Stationary Office wanted to publish 100 copies, but Graham threatened to resign unless 1,500 copies were printed.¹¹

Beverton and Holt focused on the development of four main variables: *Recruitment*, the number of fish in the exploited phase of the life cycle; *Growth* of individuals in the exploited phase, *Capture* of individuals in the exploited phase, and the *Natural* death of fish in the exploited phase. Recruitment and Growth increased the total weight of fish; Capture and Natural Death decreased the total weight. What were the interactions? Beverton and Holt expressed the four factors in a series of mathematical representations, and then adjusted the models to study the interactions between the different gear types, fishing rates, and any other applicable data.¹²

Graham hoped that Beverton and Holt's analytical framework would prove what he had argued in *The Fish Gate* in 1943, "Fisheries that are unlimited become unprofitable."¹³ Their conclusions supported Graham's hypothesis: a conservative fishing regime, while scientists studied the impact of gear changes on fish populations, resulted in catching larger fish, reduced wasteful bycatch, and earned more money for fishermen. They had even quantified how much a

¹¹ Emory D. Anderson, *The Raymond J. H. Beverton Lectures at Woods Hole, Ma.* (Washington, D.C.: National Oceanic and Atmospheric Administration, 2002), 134.

¹² Raymond J. H. Beverton and Sidney J. Holt, *On the Dynamics of Exploited Fish Populations* (London: Chapman and Hall, 1957), 21.

¹³ Michael Graham, *The Fish Gate* (London: Faber and Faber Limited, 1943), 155.

conservative fishing regime would mean for the fisheries involved, “an extra million or so pounds sterling a year on present day wholesale prices, as a reasonably cautious estimate.”¹⁴

For Graham, there was an urgent need to act before the fish stocks were reduced below the levels that Beverton and Holt had identified. The work had been carried out to give direction to the International Overfishing Conference, held in London in 1946, to provide scientific advice on the most effective way of crafting regulations to protect spawning stocks. The overfishing convention set regulations increasing the mesh size in nets, to release smaller fish, but it had not yet been ratified by all the countries concerned.¹⁵ Many European nations, including Britain, had already embarked on government-sanctioned programs to rebuild fishing fleets that had been so badly damaged during the war. Writing in 2006, Sidney Holt recalled:

Those were post-war years of optimism. It seemed that with the reduction in the number of fishing vessels available, as a direct result of the war, and the expected recovery of depleted fish stocks during it, it would be politically feasible for Europeans to engage in what Graham called “rational fishing.”¹⁶

With the race to claim high seas fish stocks already well started, Graham’s go slow method had little to offer the essentially Darwinian model of fishing described by Wilbert Chapman in 1949, in the U.S. high seas fishing policy. “There is a crop to be taken in the international common. Each takes according

¹⁴ Raymond J. H. Beverton and Sidney J. Holt, *On the Dynamics of Exploited Fish Populations* (Caldwell, N.J.: The Blackburn Press, reprint of 1st edition, 1957, 1993), 435.

¹⁵ Foreign Service Despatch from London, Dec. 21, 1951, RG 59, Box 4794, NARA

¹⁶ Sidney J. Holt, “Forward to the 2004 Edition,” Raymond J. H. Beverton and Sidney J. Holt, *On the Dynamics of Exploited Fish Populations* (Blackburn Press: 1957, 1993), ii.

to his ability. When the safe crop is taken, all stop the harvest.”¹⁷ Chapman had been confident that scientists would be able to estimate when the safe crop was taken. And he was confident that American fishermen had the ability to dominate as the world’s leading fishing nation.

12.2 Other Advances in Fisheries Science

Other scientists also made substantial contributions to the development of fisheries science during this period. Canadian William E. Ricker (1908-2001) published the Spawner per Recruit theory, which outlined means to estimate the optimum number of spawners (or parents) from each year class of fish. Ricker had been born in Waterdown, Ontario, and graduated from the University of Toronto in 1936 with a doctorate in zoology. He joined the faculty of Indiana University in 1939, before returning to Canada in 1950.¹⁸ While he was in Indiana, Ricker taught himself Russian, so he could translate the work of biologist F. I. Baranov, who wrote “On the question of the biological basis of fisheries,” in 1919. Ricker translated more than 100 Russian papers into English and in 1973, he published a Russian-English dictionary for fisheries scientists.¹⁹

The fourth influential scientist was an American, Milner B. Schaefer. One of Thompson’s best students at the University of Washington and a close friend of Wilbert Chapman’s, Schaefer was director of the Inter-American Tropical Tuna

¹⁷ Ibid, 80.

¹⁸ Kenneth Johnstone, *The Aquatic Explorers: History of the Fisheries Research Board of Canada* (Toronto: University of Toronto Press, 1977)., 264.

¹⁹ W.E. Ricker, *Russian-English Dictionary for Students of Fisheries and Aquatic Biology* (Ottawa: Fisheries Research Board of Canada, 1973).

Commission (IATTC) and one of the most respected scientists of his time. In 1962, he was appointed director of the Marine Resources Institute at the Scripps Institution of Oceanography and served as science advisor to the Secretary of the Interior from 1967-1969. He died in 1970.

The Americans may have traveled to Rome with a weak position in terms of the trend towards ocean enclosure, but they went armed with scientists to support their preferred options. Schaefer carried the scientific baggage for the American delegation. Thanks to Herrington's handling of the agenda, he was the only scientist who delivered two papers during the meeting, and his work played a decisive role in framing the American political position with a scientific overlay— that a percentage of fish stocks could safely be harvested, because they were “surplus” to the number that were necessary to sustain the population. It was an intriguing hypothesis, but it had never been tested.

12.3 The “Technical Conference”

The U. S. had gone to the United Nations in December of 1954, seeking approval for a conference designed to give the International Law Commission the guidance it sought on fisheries issues. The ILC had made three recommendations: adoption of a six-mile territorial limit, creation of an international body to deal with fisheries issues, and giving the new agency, under the Food and Agriculture Organization of the UN, binding authority. The U.S. was adamantly opposed to any extension of territorial limits from the current three miles, and it was determined not to come under the control of an international

organization. It wanted any discussion that would lead to regulations or enclosure to take place in a forum where the U.S. would have control over both the agenda and the outcome. When the Santiago conference in 1954 proposed hosting a “technical conference” on fisheries, the U.S. was concerned. Moving the conference to Rome was an effort to bolster European attendance and reduce the Latin American influence.

The directions from the United Nations were that the Rome conference was only to concern itself with the “technical” problems of fishing. D.B. Finn, the director of the fisheries division at FAO, described the meeting’s purpose as concerning “itself with the technical aspects of the principles under which a set of rules could be made for conservation rather than the rules themselves which, of course, must vary according to the region to be dealt with.”²⁰ The U. S. did not want a wide discussion of the technical and economic problems of conservation.²¹ It also did not want any discussion of territorial limits, which might lead to an undesirable ruling. “Herrington made it clear that the fisheries interests in the United States are anxious to avoid a wide discussion on problems of conservation and technical and economic aspects of the world fisheries situation,” Frank McDougall, an FAO assistant, wrote to Director-General P. V. Cardon on Oct 4, 1954.²² “In certain quarters tempers are quite high, and I think that sufficient time must be given for them to cool a bit.”²³

²⁰ D.B. Finn to B. Dinesen, Dec. 28, 1954. FAO Files, O-163 RG 61.1, Series A 3.

²¹ Floyd McDougall to P.V. Cardon, Oct. 4, 1954, Unlabeled folder, FAO Files, 14 FI 159 RG 14.

²² Floyd McDougall to P.V. Cardon, Oct. 4, 1954, Unlabeled folder, FAO Files, 14 FI 159 RG 14.

²³ D.B. Finn to Frank McDougall, Oct. 13, 1954, Unlabeled folder, FAO Files, 14 FI 159 RG 14.

Herrington drew up a provisional agenda for the Rome meeting that detailed what he hoped would come out of the conference. Papers were then solicited to amplify each of the agenda items. By Chapman's account, Herrington crafted the agenda to showcase American science, specifically the work Schaefer and the IATTC was doing on the rapidly developing American tuna fishery in the Pacific.²⁴ Schaefer contributed two papers. "Scientific Investigation of the Tropical Tuna Resources of the Eastern Pacific," applied Surplus Production Theory to the tuna fishery. "Types of Scientific Information Required for a Conservation Programme and Types of Conservation Measures Applicable in a Conservation Program" laid out an elaborate matrix that suggested how the study of fisheries ought to proceed. Thanks to the endorsement of the State Department, the thinking in both papers decisively shaped the development of American fisheries science.

12.4 "On the Scientific Investigation of Tunas"

The most talked about of the conference background papers was undoubtedly Schaefer's description of the spectacular success of the American tuna fishery in the equatorial Pacific. It is also the paper that most clearly brings together the political and scientific thinking that led to Surplus Production Theory, and the U.S. decision to have it adopted as part of international fisheries management. The paper also encapsulates the two critical assumptions that

²⁴ Wilbert M. Chapman Speech, "Prepared for Presentation at the Third Annual Conference of the Law of the Sea Institute, June, 1968, University of Rhode Island. On the United States Fish Industry and the 1958 and 1960 United Nations Conference on the Law of the Sea."

were made at Rome: 1) the biological error that fish populations had “surplus” production, and 2) the economic error, that when the Catch Per Unit Effort (CPUE) fell, fishing would stop because it was no longer economic.

In 1953, 274 million pounds of tuna had been caught, most of them by West Coast tuna clippers, “very modern, long-range craft forming one of the most specialized fleets in the world.”²⁵ Schaefer’s paper encapsulated exactly why Latin Americans were considering enacting regional law to control tuna fishing by American boats, since most of the catch had been taken by clippers off Peru, with smaller quantities landed in Chile, Ecuador, Panama, Costa Rica, and Mexico. Most of it was trans-shipped, frozen, to the U.S. for processing. (See Illustration 9, 489).

At the heart of Schaefer’s work were his estimates of the age distribution of tuna, based mainly on catch data. From this, Schaefer had drawn logistics curves that represented the age structure of each tuna; all of the tuna species had symmetrical, igloo-shaped domes. Against these curves, Schaefer had plotted the catch of tuna in the equatorial Pacific. Against the logistics curves, Schaefer plotted the catches of tuna in the eastern Pacific. (See Illustration 10, 490). The catch data for each species was plotted on the curve. The data generally show two clusters: a tight one in the data from 1934-45, close to the rising arc of the logistic curve, as the fish grew and put on weight. There is a second set of data points, the post-war catch, that are clustered near the peak of

²⁵ Milner B. Schaefer, “Scientific Investigation of the Tropical Tuna Resources of the Eastern Pacific.” Papers presented at the International Technical Conference for the Conservation of the Living Resources of the Sea, 194-221, 194.

the curves, when the population is at its maximum. Subsequently, many scientists would question the validity of the second set of data points, and its fit to what would come to be called a Schaefer curve. A critical omission was that Schaefer had been unable to find a way to age tuna. Other fish are aged by counting the growth rings on their scales or otoliths (similar to an ear bone), but tuna don't have scales or otoliths. At best, Schaefer's age distribution was little better than a guess; a good one, it turned out, but still a guess and in need of confirmation.

Schaefer's paper presented the data from two case studies, yellowfin and skipjack. He concluded that in 1953, yellowfin tuna "appears to have reached a level of intensity near the level of maximum sustained yield, there is no likely imminent danger of serious overfishing."²⁶ There was no cause for concern because the intensity of fishing had decreased in 1955, it was not economically attractive to build new vessels, and no increase in fishing intensity was expected for 1955. The analysis could have come from Harden F. Taylor in 1930, when he had written that fish stocks could not be exterminated, because as soon as the fish were thinned so fishing was no longer profitable, fishing stopped, thanks to business failure.²⁷ In other words, open markets would solve the biological problem, with no need for fishing restrictions.

Skipjack, on the other hand, while the runs fluctuated greatly, had sustained great fishing effort and showed no apparent signs of decline. As

²⁶ Ibid, 217.

²⁷ Harden F. Taylor, "Trends of Progress in the Fish Industry," *Canadian Fisheries Annual*, 1930. International Pacific Halibut Commission, Box 276, Folder "Harden Taylor Article."

Schaefer put it, the “effects of fishing at the present levels on the abundance of skipjack are so small that they cannot be detected in the presence of variations due to other factors. It would appear that the skipjack resource being tapped by the eastern Pacific fishery can support a greater intensity of fishing before reaching the point of maximum average sustained yield.”²⁸

Schaefer logistics curves clearly illustrated the argument he was making, that fish had surplus production that could safely be harvested, and when the catch per unit effort (CPUE) dropped, fishing would halt and the stocks given time to rebound to optimal levels. Introducing restrictions as the catch was increasing was not necessary. The fishery could regulate itself.

While Surplus Production Theory purported to be based on biology, it rested on an economic trigger: a decline in the Catch Per Unit Effort. It Schaefer’s yellowfin example, economic conditions had halted the expansion of fishing. Therefore, the fishery was being managed at close to MSY levels and management intervention, in the form of restrictions to slow the catch, was not warranted. When the stocks had recovered to MSY levels, the catch would then go up and fishing could resume.

This turned out to be a profoundly misleading understanding of the data. The whole biological-economic model presumed that markets were open, when in fact, they were not. Through the centuries, many fisheries had enjoyed subsidies of various sorts, such as bounties on the catching of cod in New England. Especially after 1945, governments embarked on a series of subsidies

²⁸ Schaefer, 221.

for the fishing industry in most industrialized countries, including the U.S., Britain, Japan, and the Soviet Union. The scale and range of the subsidies varied, but substantial amounts of government money were invested into the fishing industries of most developed nations. The development of fisheries in poorer countries, through such programs as the FAO, also acted to subsidize fishery development. Government programs subsidized the cost of building boats and processing facilities, development and marketing of new fish products, most through low-interest loans. Tariffs are also a form of subsidy, and various countries introduced protective measures to protect their fishermen from low-cost imports.

When fish catches fell, the economic incentive to leave the industry was neutralized by government actions. If anything, once government spending was established, subsidies continued, creating the pressure for more assistance, and continually thwarting the expected corrective action of the markets.²⁹ In a truly sociologically flexible system, where fishermen could easily enter and leave fisheries to take other employment during bad times, this economic trigger might have worked. But the fisheries market was not open, government subsidies (initiated for political and foreign policy reasons) were extensive, and most fishermen frequently had no other occupations to turn to when fishing was poor.³⁰

²⁹ Donald Ludwig, Ray Hilborn, and C. Walters, "Uncertainty, Resource Exploitation, and Conservation: Lessons from History," *Science* 260, no. 17 (1993).; William B. Schrank, "The Failure of the Canadian Seasonal Fishermen's Unemployment Insurance Reform During the 1960s and 1970s," *Marine Policy* 22, no. 1 (1998).

³⁰ See Daniel Vickers, *Farmers and Fishermen: Two Centuries of Work in Essex County, Massachusetts, 1630-1830*. (Durham: University of North Carolina Press, 1994), and the *Commercial Fisheries of Canada* report by the Fisheries Research Board in 1956.

12.5 “Types of Scientific Information Required for a Conservation Programme”

Schaefer's second paper, his analysis of the types of scientific information needed for conservation, reveals some of the thinking under Surplus Production Theory. He asserted that populations of fish and other organisms tended to remain in balance with their environments. If more fish were taken by predation or other means, the population would tend to come back into balance. This happened during fishing, since a fishery

is simply an increase in the predation rate. It is the compensatory reaction of the fish population to the mortality produced by fishing which made a fishery possible, so that the population comes into balance under environmental conditions which include predation by man. It is theoretically possible to impose so much fishing ...to drive it below its threshold magnitude for survival. I know, however, of no instance where this has been accomplished in a purely marine fishery. It appears that the threshold magnitude is almost always well below the population size to which it is economically possible to fish.³¹

Schaefer's thinking was in line with the nineteenth century view of T.S. Huxley, that fishing was part of the natural predation among fish populations. He also followed the basic argument laid out by Chapman in 1949, in his U.S. High Seas Fisheries Policy, that had adopted Maximum Sustained Yield as the goal of American fisheries policy. Schaefer equated fishing by humans as a natural part of predation in the ocean, in keeping with MSY's inherent implication that fishing is good for fish stocks, creating the conditions that produce large numbers of younger fish that grow rapidly to a harvestable size. Schaefer recognized there

³¹ Milner B. Schaefer, “The Scientific Basis for a Conservation Program,” The International Technical Conference on the Conservation of the Living Resources of the Sea, Food and Agricultural Organization of the UN, Rome, April 18-May 10, 1955, 15-55, 15.

were other variables that affected the size of fish populations, including variations in the natural environment, and so one of the chief tasks for scientists was to account for the natural fluctuations in the stocks, and separate them from the impact of fishing.

By assuming that the drop in the yellowfin catch in 1953 was because the fish had become less abundant, Schaefer extrapolated that no management measures were needed to regulate the catch. Restrictions would be implemented, but the critical point is that harvest was designed to continue, just at slightly lower levels. When catch levels had dropped and fishing was no longer economic, fishing would stop, and that point was well beyond the population needed for reproduction, a claim that might have been true, but there was no scientific evidence to substantiate it.

Schaefer laid out three scenarios or levels of study in an elaborate matrix. Level I, the first and most practical, focused on studying the relationship between fish and fishing, how many fish were being taken, how large was the population, and how quickly the fish grew. Schaefer acknowledged that the weakness with the approach was it did not look at the factors that caused populations to increase. But it was often adequate “to determine whether a greater average harvest may be obtained by restrictions on fishing.”³² He saw the studies he was directing at the tuna commission as being within his Level I framework. (See Illustration 11, 491).

³² Ibid, 17.

Level II investigations focused on estimating the size of a fish population, and calculating reproductive rates, growth rates and natural mortality. These more in-depth studies provided an improved understanding of fish populations, but the environmental forces were treated as random variables, “so that regulation is possible only for average environmental conditions.”³³ Schaefer saw the work being done by the Beverton and Holt as being within this level.

At Level III, scientists would look at the environmental factors—both physical and biological—influencing the population, allowing “capacity for full management of the fishery.”³⁴ This ideal stage had not been realized (and neither had levels I and II), but it was the ultimate goal of fisheries science.

Schaefer argued it was possible to provide useful advice even with the relatively limited information from Level I studies alone; in other words, Schaefer was buttressing the limited results he had gathered from the brief investigation into the tuna fishery, saying that such limited studies provided enough information to manage the fishery. “To control a fishery completely it would be necessary to understand all of these interrelationships in their entirety. However, it is possible to achieve a useful measure of control with less than perfect understanding.”³⁵ In this argument, Schaefer echoed the outlook of his mentor and teacher, W. F. Thompson in a 1922 paper, where he argued that it was all very well for European scientists to undertake extensive marine studies (what

³³ Ibid, 19.

³⁴ Ibid.

³⁵ Ibid, 17.

would be akin to Level III), but a state had limited resources and much information could be gained by limiting investigation to the factors that cause fish populations to vary (Level 1).³⁶ In his concentration on the tuna fishery, Schaefer ignored the impact of expanded tuna fishing on baitfish—which the Latin Americans argued were overfished. Schaefer's analysis showed that the fleet had used 2,500 "thousands of scoops" in 1951. By 1953, the thousands of scoops had increased to 4,250.³⁷ (See Illustration 12, 492).

In his analysis of the Rome meeting, biologist Tim Smith wrote that ecological analysis was more of an ideal than a priority for scientists:

Schaefer's *idealization* of ecological research made it a desirable thing rather than necessity, because he felt that such research would only provide greater precision to the fishery researcher, not markedly different management advice.³⁸

But while ecological studies may have been ideal but impractical, Schaefer also pointed out that at least two fisheries, the Canadian, American, and Japanese salmon fishery in the North Pacific, and the sardine fishery off California, were moving in the direction of Level III analysis.³⁹ What he did not acknowledge was that fishery collapse drove both of his examples of movement towards Level III fisheries research. The North Pacific salmon research program was driven by the political problem of finding a scientific justification for keeping

³⁶ Will F. Thompson. "The Marine Fisheries, the State and the Biologist." *The Scientific Monthly*. No. 15, 1922. 542-550. 549.

³⁷ Milner B. Schaefer, "Scientific Investigation of the Tropical Tuna Resources of the Eastern Pacific." Papers presented at the International Technical Conference for the Conservation of the Living Resources of the Sea, 194-221.

³⁸ Tim B. Smith, *Scaling Fisheries: The Science of Measuring the Effects of Fishing, 1855-1955*, (Cambridge: Cambridge University Press, 1994), 331.

³⁹ *Ibid*, 44.

the Japanese out of Bristol Bay, as inshore catches dwindled and the harvest increased outside convention waters. The California Cooperative Fisheries Investigation (CalCOFI) had been established after the war in response to the collapse of the sardine stocks.

We know today that there are more than 12,000 species of fish in the sea.⁴⁰ But by 1954, none had been studied well enough to conclude that even meaningful Level I studies had been completed. To be sure, enormous amounts of data had been collected, but well-designed investigations into growth, reproduction, and mortality had not been made for most fish species, with the possible exceptions of salmon and halibut, and the major North Sea species studied by Beverton and Holt. There were many, many other fish in the sea, some of them that had only recently been discovered, thanks to the technological revolution in fishing after the war. And very few fish had even been aged correctly (a critically important factor in estimating population size), so that the relationship between age structure and total population could not be established.

12.6 Controlling the Rate of Fishing

One scientist, at least, challenged Schaefer's optimistic view of the role of fishing on fish populations. That was Britain's Michael Graham. In his keynote address that opened the conference, he took the opportunity to sound the theme of *The Fish Gate*, that fisheries needed to be regulated or they would become unprofitable. Citing the work of W. F. Thompson at the International Pacific

⁴⁰ Joseph S. Nelson, *Fishes of the World* (Hoboken: John Wiley, 2006).

Halibut Commission, Graham pointed out that, although the Commission's management had resulted in an increased catch, the season had shrunk from eight and one half-weeks in 1932 to only 28 days on one fishing ground and 56 days on a second. Clearly, the stocks were facing increased pressure.⁴¹ And fishermen would be having a more difficult time catching enough fish to cover costs. Overall increased catches hid the fact that fishermen were working harder to land their catch, and fishing was less profitable.

Graham also challenged the assumption that human predation was natural. If "one agent of death becomes so active as to claim more fish than die by all other agencies together, then that agent has control of the of the average age of the stock of fish."⁴² Human fishing differed in both scale and magnitude from other forms of predation. In a natural system, predation was focused on young fish and predation eased as fish grew larger. Fishing, on the other hand, targeted larger fish, creating predation pressures throughout a fish's life span. Graham argued, moreover, that when fish were caught at a larger size, the yield was much higher. "Great benefits of several kinds are therefore obtainable if the rate of fishing can be controlled, especially when, as often is the case, an intermediate rate of fishing gives the best result."⁴³

Graham was also underscored a key limitation to Schaefer's Surplus Production Theory. Schaefer's growth curves, which illustrated tuna survival,

⁴¹ Michael Graham, "A First Approximation to a Modern Theory of Fishing," The International Technical Conference for the Conservation of the Living Resources of the Sea, April 18 to May 10, 1955, Rome, Food and Agricultural Organization of the United Nations, 56-57, 57.

⁴² Ibid, 57.

⁴³ Ibid, 59.

were all dome-shaped. The higher the dome, the more fish could, theoretically, be taken—and the more obvious it would be when maxima were reached. In a letter to Schaefer written after the conference, Graham observed that not all fish populations exhibited growth curves with large domes; some populations had flat curves or were even asymptotic.⁴⁴ This indicated that some populations did not have large harvestable surplus numbers, and it would be difficult, perhaps impossible, to judge where you stood on the curve—or to accurately estimate when stocks had been overharvested.

Under Graham's approach, gear restrictions and mesh sizes would be introduced to the fishery early on, before scientists had established that stocks were declining, while the research was ongoing. It was a go slow approach that sought to achieve long-term economic benefits for fishermen, by protecting young fish from exploitation until they were older, larger, and had spawned. Today, it is tempting to call Graham's proposals precautionary, but Graham, the Quaker and Socialist, was motivated not so much by the desire to protect fish as the desire to protect fishermen. But protecting fishermen would also protect fish..

12.7 The Scientific Dissent

Why were Graham's warnings brushed aside? The historical evidence suggests it was because the outcome of the conference had been decided before it started. Graham said as much in his keynote address. "In the Old World

⁴⁴ Michael Graham to Milner Schaefer, May 29. 1956, Box MC 2, Unlabeled folder, papers of Milner B. Schaefer, Scripps Institution of Oceanography.

we have not as yet made any explicit choice among the possible qualities of a fishery—but in the New World, the choice of maximum sustained yield has been explicit in all recent international conventions.”⁴⁵ Graham headed Britain’s scientific delegation to Rome, but the British delegation itself was headed by the Minister of Fisheries, Ronald Wall. It is normal in diplomacy to have decisions made in advance of meetings. But the scientific process is supposed to be open, with time for scientists to argue and persuade. At Rome, this did not happen. The decisions had been made before the conference started.

As Graham pointed out, the three new American fisheries conventions, Schaefer’s tuna commission, the International Convention for North Atlantic Fisheries, and the International North Pacific Fisheries Commission, had imposed a goal of MSY before scientific deliberations had begun. It would be a good many years before the new research programs set up by the commissions produced enough information to draw conclusions about the health of the stocks. In the meantime, fishing would continue without regulation.

Biologist Tim Smith has said that scientists in the early 1950s knew that something about MSY was not right, but they were unable to put their finger on what or why.⁴⁶ But in fact, others besides Graham were troubled by the way things seemed to be moving. D.B. Finn attempted to have a paper written by Sidney Holt, who began working for him at FAO in 1953, included in the

⁴⁵ Michael Graham, “Concepts of Conservation.” FAO. “Papers Presented at the International Technical Conference on the Conservation of the Living Resources of the Sea.” Paper presented at the International Technical Conference on the Conservation of the Living Resources of the Sea, Rome, April 18 to May 10, 1955.

⁴⁶ Tim Smith, personal communications.

conference documents. Holt wrote a paper that challenged the American maximum yield concept. “Some observations on the concept of ‘maximum equilibrium catch’ in relation to conservation problems,” went through at least four drafts, according to FAO archives, but it was not included in the conference’s published papers.

Holt argued against research aimed at estimating a “critical point” for ocean fishery management.⁴⁷ His analysis argued that if fishing was focused on harvesting the maximum catch at its maximum weight, this objective could only be met “with an infinitely high fishing intensity and hence at a correspondingly high cost; it is therefore a *totally unreal objective for resource use*.”⁴⁸

In a letter to Schaefer, written on March 25, 1955, Finn responded to comments Schaefer had made about Holt’s paper. Finn asked if scientists knew enough about any population of fish to decide if fishing was having a particular impact on the stocks. He wrote that a fishery problem could not be identified as a conservation problem until basic information was available about the fish stock and the impact of fishing on it. “However, we may hope that at the UN meeting such principles as these may be discussed and clarified.”⁴⁹ It was a vain hope for a political meeting.

MSY was exactly the opposite of the approach suggested by Graham, Beverton, Holt, and Finn-- that a more conservative regime, with fishing

⁴⁷ Papers of D.B. Finn, April-May 1954 conference, Miss. Manuscripts and clippings. Holt’s paper is labeled “Fourth Draft.” FAO, 14 FI 159 RG 14.

⁴⁸ Ibid, 7.

⁴⁹ Finn to Milner B. Schaefer, March 25, 1955. FAO, O-163 RG 61.1, Series A1 1951-1960.

restrictions imposed early, produced a greater yield of fish and protected stocks that had not spawned. Holt's paper worked out the argument in detail, but Finn was unable to get the paper included in the published conference documents. There is no surviving correspondence around Holt's paper, but it seems likely that, in addition to not wanting a discussion of territorial limits, Herrington did not want his agenda with its "impeccable conservation science" to be jeopardized by views that did not lend themselves to the American position. Introducing regulations while the fishery was still expanding would have opened the door for the Latin Americans who wanted to restrict the American tuna fishery.

In a memo after the conference, Finn argued MSY was not a single yield, but many yields, depending on the interplay of several factors, including the productivity of the ecosystem, which was not constant. MSY "is an entirely theoretical concept, about the determination of which biologists and others are still arguing and will undoubtedly continue to argue. Should we set up such a criterion as the basis of recommendations from this Conference? I think not."⁵⁰

Finn's memo pointed out the significance of the conference's conclusions, that conservation measures would not be justified without scientific evidence.⁵¹ Fishing could not be restricted until it had begun to damage fish stocks.

Graham lost the debate. The British scientists were also outflanked by their own government. After more than a decade of trying to engineer fishing

⁵⁰ Misc. notes, 1955 Conference, Folder 14, FAO, 14 FI 159 RG 14.

⁵¹ Misc. notes, 1955 Conference, Folder 14, FAO, 14 FI 159 RG 14.

limits in the North Sea, the British in 1950 began rapid expansion of its fishing industry. The Whitefish Authority was created, fish prices were subsidized, as was a program to build new boats, so that British fishermen could compete with foreign fishermen and their lower labor costs.⁵² A line of fishing boats, this time off Norway, Iceland, Greenland, and Newfoundland, played an important role in Britain's own reaction to territorial claims.

12.8 The State Department Preparation

Having decided to outflank the proposal from the Organization of American States to hold a conference on the conservation of the living resources of the sea, Herrington threw the resources of the U.S. State Department into making sure that the conference would meet multiple American objectives. The most significant was to halt the Latin and South American countries from creating international law on a regional basis, weakening the three-mile limit and eroding the freedom of the seas for American ships and submarines. At the same time, Herrington wanted to secure the continued right of American tuna boats to fish anywhere in the world. He also wanted another international body to adopt the Abstention Principle, which he had succeeded in forcing on the Japanese when the Tripartite Treaty in the North Pacific was signed. If Abstention could be recognized at Rome as a principle of international law, it would add legitimacy to the concept and help keep the Japanese at bay in the North Pacific.

⁵² Foreign Service Despatch from Edinburgh, June 27, 1950, Box 4794, NARA RG 59.

The American position was complex. The primary argument was that fish could be conserved without territorial claims, through the creation of bilateral or multilateral organizations, such as the U.S. and Canada had created to share halibut and salmon. Conservation could only be achieved through scientific programs, set up by international agreements among the concerned states. Sovereignty beyond three miles was not needed.⁵³ There was no need for an international commission, with binding authority, under the auspices of the UN. The delegation was to shape the recommendations to the ILC as much as possible to reflect the American political objectives.⁵⁴ As Herrington pointed out time and again in the State Department memorandums, "It is incumbent upon the United States to take every opportunity to maintain the principle that international law does not require a state to recognize more than three marine miles of territorial waters. Beyond this lie the high seas to which freedom of navigation and fishing for all countries appertains."⁵⁵

The UN formed a small group of experts to meet in New York during January to help plan the meeting. Governments were invited to contribute papers, scientists were invited to make contributions, and a March 1 deadline was set for submissions.⁵⁶ FAO had not been involved in the UN decision, but

⁵³ Harold Kissick to W. F. Looney, Feb. 8, 1955, Box 1539, Folder 398.245-SA6-755. NARA, RG 59.

⁵⁴"Draft instructions", William C. Herrington, March 30, 1955, Box 23, Folder, "UN International Conference on the Living Resources of the Sea. Papers of Edward Allen, University of Washington Special Collections.

⁵⁵State Department memorandum, William Herrington to Harold Kissick, June 7, 1955, Box 1539, Folder 398.245-SA6-755, NARA, RG 59.

⁵⁶ State Department Memorandum, Jan. 31, 1955. NARA, RG 59, Box 1538, Central Decimal Files, 1955-1959.

was informed during negotiations that it would host the conference. It was extremely tight timing for such a complex meeting, and D.B. Finn was not happy. "If my advice had been asked, I think I would have counseled a later date on such a complex matter," he wrote.⁵⁷ But if the recommendations were to be ready for the law commission, scheduled to meet in June in Geneva, the conference had to be completed during May.

Herrington led the American delegation. The State Department also sent John C. Dreier, who dealt with Latin American issues, and Fred E. Taylor, a foreign affairs specialist who worked with fisheries. Arnie Suomela, the assistant director of the U.S. Fish and Wildlife Service, was appointed, along with Oscar E. Sette, the director of the Pacific Ocean Fishery Investigations, based in Honolulu. Three advisors were appointed from the fishing industry. First was Wilbert Chapman, now representing the tuna industry. Seattle attorney Edward Allen was to represent the salmon industry, and Charles E. Jackson, the general manager of the National Fisheries Institute, a lobbying group in Washington, D.C., rounded out the delegation.⁵⁸ There was also a clutch of scientists, including Schaefer. Delegates received several sets of detailed instructions, including background papers, position papers, and instructions about what could and could not be discussed (such as any position that endorsed territorial claims). There were brief talking points and an elaborate legal position.

⁵⁷ D.B. Finn to B. Dinesen, Dec. 28, FAO Files, O-163, RG 61.1 Series A 3.

⁵⁸ State Department Memorandum, From W.F. Looney to Harold Kissick, Feb. 8, 1955, NARA RG 59, Box 1538, Folder 398.245.

The tensions within the industry surfaced before the delegation left the U.S. In a long memorandum, after the meeting, Edward Allen wrote that he was concerned about insulating the salmon industry from any positions that might be taken by the tuna industry. Allen was adamant that the survival of the salmon fishery depended on the Principle of Abstention. In draft documents, Herrington suggested voluntary abstention by the Japanese, which Allen rejected as inadequate. Allen was also upset that Herrington wanted to have the International Pacific Salmon Commission pay his expenses in Rome, while Chapman's expenses were to be covered by the government.⁵⁹ Allen left for Rome, unhappy with the depth of Herrington's commitment to the Principle of Abstention, his sympathy towards the Japanese, and the influence Chapman and the tuna industry exercised over the delegation. But Chapman himself was unhappy about being forced to support the Principle of Abstention, which he considered a danger to the tuna industry. It is possible that Herrington's discussion of voluntary abstention was designed to appease the tuna industry, weakening Abstention as a precedent for Latin American countries to restrict the tuna fishery.

Having decided on a strategy, Herrington spent the winter of 1955 seeking support for the U.S. position. He traveled to Ottawa, Gothenburg, Oslo, Stockholm, and London during February, for consultations. The most extensive negotiations were with the British. Herrington traveled to London in January and

⁵⁹ Memorandum, undated, papers of Edward Allen, University of Washington Special Collections, Box 23, Folder, "UN Technical Conference on the Living Resources of the Sea."

again in February of 1955. During a meeting with the Minister of Fisheries, Ronald Wall, Herrington argued that MSY was the most appropriate goal for fisheries management. Michael Graham objected to Herrington's conclusion, arguing "it was unreal to emphasize solely this object when others were equally valid."⁶⁰ Herrington replied that MSY was the only objective that was likely to receive general backing, which may have been a political assessment, not a scientific one. The scientists responded with an annotation to the agenda item, including the language that "It is, as a general rule, considered that the primary objective of fishery conservation is to control man's activities so as to produce the maximum sustainable yield of products in the form most useful to man."⁶¹ This language was dropped from later versions of annotated agenda.

Herrington also met with Cuban ambassador Garcia Amador on Feb. 21, 1955, and expressed his appreciation for the efforts Garcia was making "in developing a moderate position" in advance of the Rome meeting.⁶² Garcia met informally in Havana during February with representatives from Cuba, Brazil, Columbia, Venezuela and Uruguay.⁶³ Herrington flew to Havana on March 8 to

⁶⁰ Summary Record of an Informal Meeting Held in London on 9th/10th February, 1955, FO 371/115380.

⁶¹ Ibid.

⁶² Memo, meeting between Garcia and Herrington, Feb. 21, 1955, Box 1538, Folder 398.245, NARA, RG 59.

⁶³ Telegram, W.F. Looney to William Herrington, Feb. 18, 1955, Box 1538, Folder 398.245, NARA, RG 59.

meet with again with Amador for discussions.⁶⁴ He also visited Mexico for informal discussions.⁶⁵ He arrived in Rome a week before the meeting, to confer with delegates from France, Greece, Panama, Turkey, and Nationalist China.⁶⁶ The extensive consultations with potential allies were necessary to line up the votes to support the American position.⁶⁷

Three weeks before the conference started, on March 27, 1955, Ecuador seized two American flag fishing vessels, the *Arctic Maid* and the *Santa Ana*, off the Ecuadorian coast. An American seaman was seriously wounded by gunfire from the Ecuadorian patrol vessel. Fines of more than \$49,000 were imposed on the vessel, despite strong American protests.⁶⁸ Ecuador's ambassador to the U.S., Jose Chiriboga, apologized for the shooting, but said the *Santa Ana* was fleeing from the Ecuadorian enforcement vessel. He said Ecuador was bound by the international agreement it had signed with Peru and Chile to take action to protect its maritime waters.⁶⁹ Tensions were high as the delegates headed to Rome.

⁶⁴ American Embassy Habana, Feb. 23, 1955, Box 1538, Folder 398.245, NARA, RG 59.

⁶⁵ Foreign Service Despatch, American Embassy, Mexico, April 4, 1955, Box 1538, Folder 398.245, NARA, RG 59.

⁶⁶ Department of State Instruction, March 28, 1955, Box 1538, Folder 398.245, NARA RG 59..

⁶⁷ The Rome meeting was not the only concern. It would be followed by the meeting of the International Law Commission in Geneva in June, and a fall meeting of the Inter-American Council of Jurists, meeting on the issue of territorial waters. Also planned was a 1955 Specialized Inter-American conference on the submarine shelf and oceanic waters. The UN had given the law commission of deadline of making its recommendations for its Eleventh Session in 1956. Taken as a package, the Rome meeting was the first of a series of important meetings where the U.S. had to defend its position that no country had a right to more than a three-mile territorial limit. Memo, from W.F. Looney to Harold Kissick, Feb. 8, 1955, Box 1538, Folder 398.245, RG 59.

⁶⁸ *Commercial Fisheries Review*, September, 1955. 5.

⁶⁹ State Department Memorandum of Conservation, March 31, 1955, Box 4142, 811.245, NARA RG 59.

Millions
of pounds

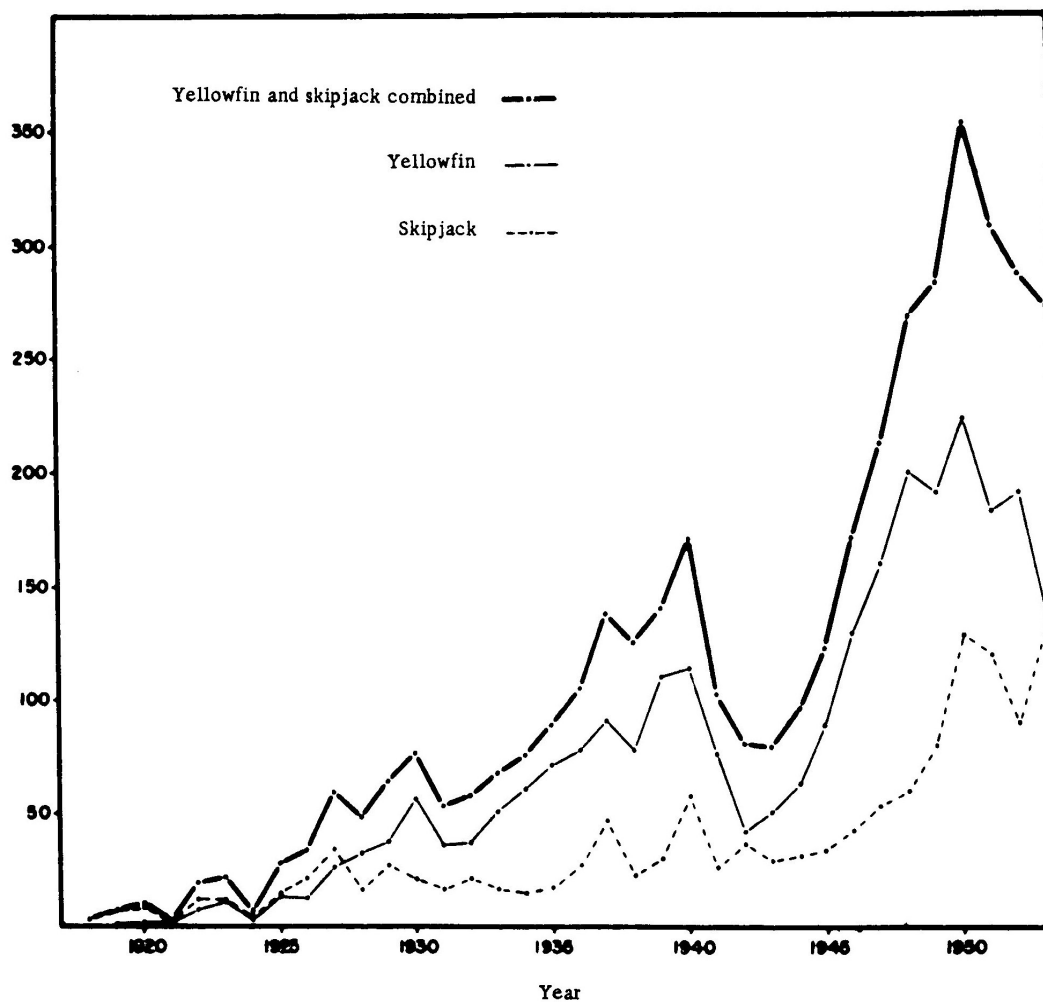


Illustration 9: American tuna catches in the equatorial Pacific. From Milner B. Schaefer, "Scientific Investigation of the Tropical Tuna Resources of the Eastern Pacific," Papers presented at the International Technical Conference for the Conservation of the Living Resources of the Sea, United Nations Publications 1956, 194-221.

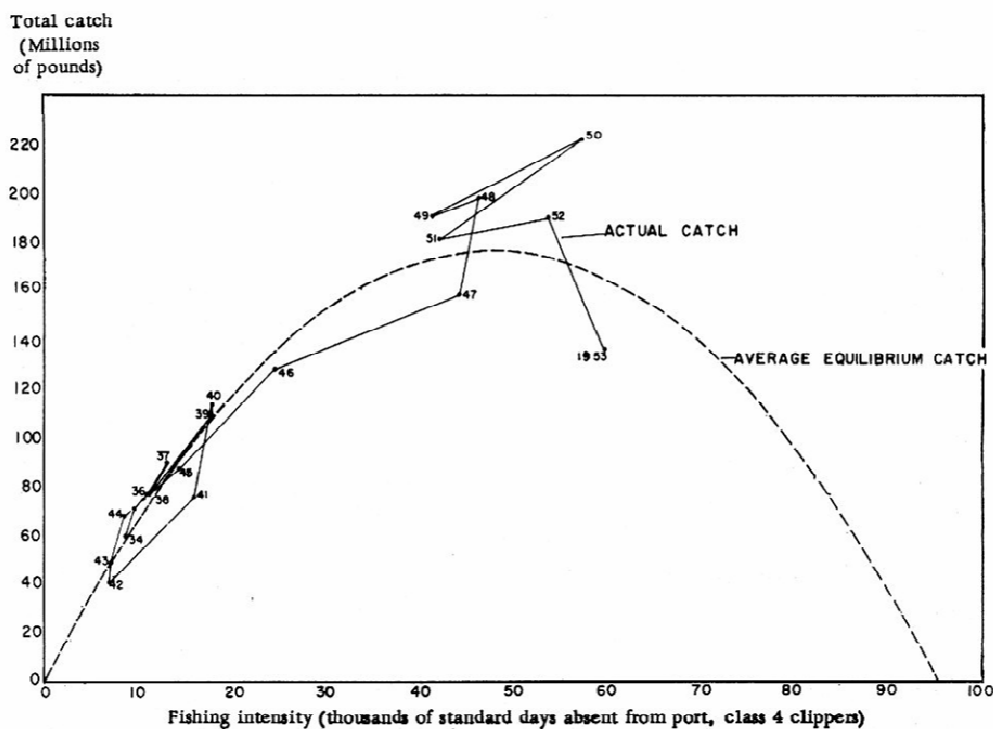


Illustration 10: Schaefer's yellowfin logistics curve, and the catch from 1934-1953. From Milner B. Schaefer, "Scientific Investigation of the Tropical Tuna Resources of the Eastern Pacific," Papers presented at the International Technical Conference for the Conservation of the Living Resources of the Sea, United Nations Publications 1956, 194-221.

Figure 1. Interrelationships of factors determining standing crop and yield

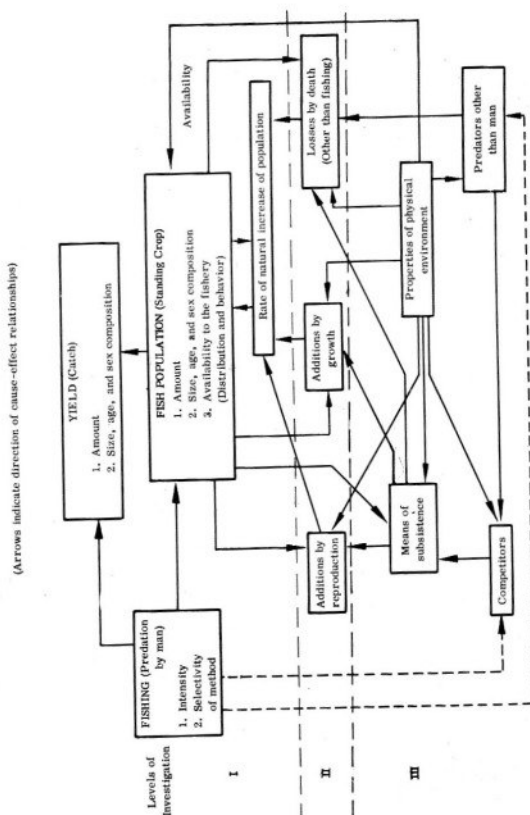


Illustration 11: Schaefer's matrix for fishery investigations. The matrix shows the three levels of fishery investigations, and the inter-relationships between factors determining the standard crop and yield. From Milner B. Schaefer, "Types of Information Required for a Fishery Conservation Programme," Papers presented at the International Technical Conference for the Conservation of the Living Resources of the Sea, United Nations Publications 1956, 15-55, 18.

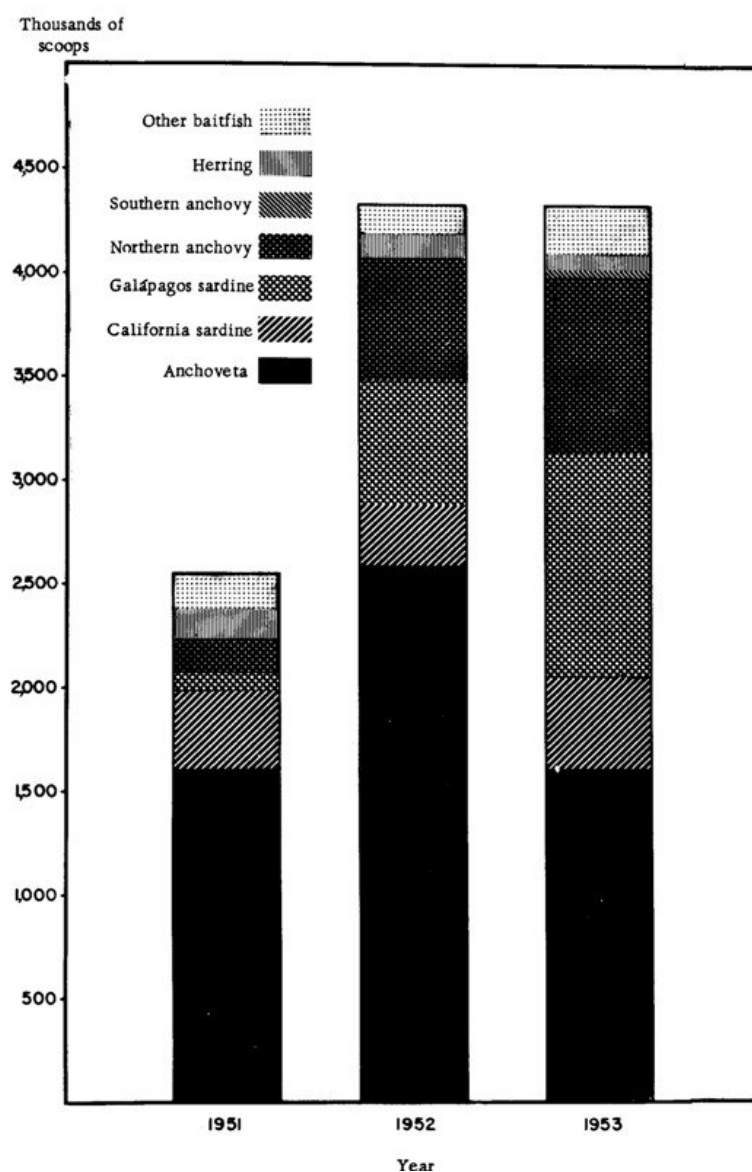


Illustration 12: Quantities of baitfish taken by American clippers. From Milner B. Schaefer, "Scientific Investigation of the Tropical Tuna Resources of the Eastern Pacific," Papers presented at the International Technical Conference for the Conservation of the Living Resources of the Sea, United Nations Publications 1956, 194-221.

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Chapter Thirteen

The Meeting in Rome

Manifestly, major interests of the United States Government—security, naval, maritime, air transport, as well as fishing operations, are inextricably involved in any move which would alter the scope and attributes of these two principles as the United States views them under international law. Briefly stated, that view is that international law does not require a state to recognize more than three marine miles of territorial waters. Beyond this zone lie the high seas to which freedom of navigation and fishing for all countries appertains.¹

William Herrington, 1955

The International Technical Conference on the Living Resources of the Sea began April 18, 1955, at the Food and Agricultural Organization headquarters in Rome. Delegates from 45 countries attended, including the Soviet Union, as well as a goodly sprinkle of scientists from regional and international organizations, such as International Council for the Exploration of the Sea. “It was emphasized that the Conference should not discuss matters of a legal or political nature,” according to the introduction of the published scientific papers.² But the political and economic objectives had already been inextricably interwoven with the science. Politics and economics were embedded in fisheries theory, especially Surplus Production Theory. Scientists helped run the meeting, but science did not.

¹¹“Draft instructions”, William C. Herrington, March 30, 1955, Box 23, Folder, “UN International Conference on the Living Resources of the Sea, Papers of Edward Allen, University of Washington Special Collections.

² Preface, *Papers Presented at the International Technical Conference on the Conservation of the Living Resources of the Sea, Rome, 18 April to 10 May 1955*. (New York: 1956) United Nations Publication Sales No.:1956.II.B.1, iii.

There were potent Cold War undertones. Rome was the first international fisheries conference to have Soviet fishery scientists attend. The Soviets proposed seating delegates from Communist China, East Germany, and North Korea. The Americans opposed the proposals, saying only UN members could participate. But to the surprise of the U.S., after some differences on organizational matters, the Soviets voted consistently with the U.S. and Britain.³ In fact, the greatest conflict was not with the USSR, but with Latin America. As a May 2, 1955, telegram to the State Department explained:

Extreme position three South American states on fisheries controls is manifesting itself this stage and being supported by Soviet bloc in obvious attempt to promote recognition special rights coastal states and in general block satisfactory recommendations to ILC by conference.⁴

The North-South conflict over fisheries development was escalating. If the Americans had been scornful of Japanese science before and after World War II, they were downright patronizing about Latin American fisheries science. A legal advisor wrote in the Department of State Bulletin in 1955 that there was a “fundamental difference” between the Truman Proclamation and the “Latin American texts which have followed it.”⁵ The Americans steadily refused to

³ Telegram, Herrington to State Department, May 12, 1955, Box 1538, Folder 398.245, NARA RG 59.

⁴ Telegram, May 2, 1955, Box 1538, Folder 398.245-RO/5-255, NARA RG 59.

⁵ Herman Phleger, “Regime of the High Seas and Conservation of the World’s Fisheries Resources,” *The Department of State Bulletin*, XXXII, No. 832, June 6, 1955, 934-940.

acknowledge the legitimacy of conservation concerns expressed by the Latin Americans, insisting that the territorial claims were “exaggerated,” and that Chile, Peru, and Ecuador was only interested in “tribute” from American fishermen.

The delegates were almost evenly divided between two groups. Some coastal countries, such as Peru and Mexico, did not have developed fisheries. The fishing nations, including the U.S., Japan, Britain, and Norway, had very effective or wide-ranging fisheries. Both groups claimed the moral high ground. The Latin American countries accused the U.S. of depleting their bait fish resources, and taking stocks before local boats could organize their own fishery. The Americans stood on their conservation record, the seven international fish and fur seal treaties it had negotiated since 1911, and its success in working with Canada to restore salmon and halibut fisheries in the Northwest. That the Americans conserved fishery resources was an embedded truth that went back to George Brown Goode, who had represented the U.S. at the London fisheries exhibition in 1883. This belief was reified within the minds of American scientists such as Wilbert Chapman, William Herrington, and Milner Schaefer, and it was adopted as the scientific foundation of policy positions. But it ignored the collapse of California sardines, and the fact that Alaskan salmon runs were spiraling downward, under the increased pressure of liberalized regulations in Bristol Bay and the growing Japanese fishery in the high seas. When Americans sought a cause for the decline, it looked to Japan.

For American purposes, the most significant vote came on May 5, on three paragraphs that framed the conference's conclusions for the International Law Commission. The language was:

1. Conservation is essential in the development of a rational exploitation of the living resources of the seas. Consequently, conservation measures should be applied when scientific evidence shows that fishing activity adversely affects the magnitude and composition of the resources or that such effects are likely.
2. The immediate aim of conservation of living marine resources is to conduct fishing activities so as to increase, or at least maintain, the average sustainable yield of products in desirable form. At the same time, wherever possible, scientifically sound positive measures should be taken to improve the resource.
3. The principle objective of conservation of the living resources of the sea is to obtain the optimum sustainable yield so as to secure a maximum supply of food and other marine products.

MSY was now enshrined as the scientific goal of international fisheries management. Mexico and Peru offered an amendment that came to a vote on May 5. By a one-vote margin, they had the following sentence inserted in the last paragraph:

When formulating conservation programs, account should be taken of the special interests of the coastal State in maintaining the productivity of the resources of the high seas near to its coast.⁶

Chapman recorded the vote: "Against us" were Argentina, Brazil, Chile, China, Colombia, Costa Rica, Cuba, Ecuador, Guatemala, Iceland, India, Indonesia, Korea, Mexico, Paraguay, Peru, Uruguay, and Yugoslavia. "For

⁶ FAO, O-163 RG 61.1, Series C3, Memo from D.B. Finn to the FAO Director General, May 19, 1955.

us” were Belgium, Egypt, France, Germany, Greece, Italy, Japan, Monaco, Netherlands, Norway, Poland, Portugal, Spain, Sweden, United Kingdom, the USSR, and the US. Australia, Canada, Denmark, Honduras, Nicaragua, Panama, Turkey and South Africa abstained. El Salvador and Israel were absent.⁷

The language in the recommendations reflected the American thinking at the time: that fishing and other human activities, such as hatcheries, played a positive role in increasing or maintaining fish stocks. The great sea fisheries were essentially inexhaustible; yes, they fluctuated, and too many fish could be taken, but the ocean was powerfully productive and under modern scientific management, fish stocks would be sustained. The aim of fisheries management should be to harvest fish until a critical maximum point was reached, when conservation measures could be applied.

13.1 The Conference Results

Herrington’s hard work and politicking paid off. The U.S. position had improved as the meeting went on. Delegates who were suspicious seemed to at least understand, even if they would not vote to uphold the Principle of Abstention. Herrington cited Australia, the Union of South Africa, and India as examples of this. The Soviet and Polish delegations voted consistently with the U.S.

⁷ Chapman notes, ATA Files, Box 76, Folder, “Rome,” Scripps Institution of Oceanography.

It was the United States (not the United Kingdom) which dominated the Conference and the United Kingdom delegation, though able, gave evidence of being not so well prepared as the United States delegation and certainly not knowing as much about conference technique.⁸

Although there was discussion about creating an international body to regulate fishing on the high seas, no action was taken. The U.S. position prevailed.

In an editorial after the meeting, *La Nacion* listed the accomplishments of the Peruvian delegation at the meeting, calling the one-vote margin on the sentence recognizing the rights of the coastal states a significant victory.⁹ While the language in the Mexican and Peruvian sentence seems minor, it recognized a position that they had been pushing for more than a decade. By a one-vote margin, they had forced the Europeans to acknowledge that coastal states had special interests. The fishing nations of the U.S., Britain, and Japan saw the language as opening the door to territorial expansion that could prejudice their distant water fleets.

Despite the single sentence, the State Department considered the Rome conference a success. Many American goals had been achieved. The process of creating regional international law was checked. The American tuna fleet, as well as the distant water fleets of Britain, Japan, and a host of other developed countries, could continue to fish off the coasts of poorer, less developed countries. Foreign fishing could only be halted when scientific studies proved that overfishing was occurring.

⁸ Foreign Service Despatch, June 3, 1955, Box 1538, 398.345, NARA RG 59.

⁹ Department of State, Division of Language Services, *La Nacion*, June 21, 1955, Box 10, Folder 3, Papers of Miller Freeman, University of Washington Special Collections.

There were some disappointments as well. Herrington wrote in 1989 that the U.S. and Canada were successful in many of the procedures and processes at the Rome meeting, but they could not sell the Principle of Abstention. They canvassed the attendees and found that the vote would lose by a narrow margin, so the principle was withdrawn; they planned to resurrect it at the ILC meeting in Geneva in June. But once again Herrington would have to withdraw the proposal. “In the game we were involved in, one clear-cut negative vote meant we were finished,” wrote Herrington in 1989.¹⁰ In fact, Herrington himself pointed out, in a 1953 memorandum, that the chief limitation of the Abstention Principle was “that few nations have fisheries which qualify for abstention, either because of under-exploitation or failure to develop and apply proper conservation programs.”¹¹ He went on to add that nevertheless, abstention was the only principle that took into consideration overall U.S. American fisheries policy. In this, however, Herrington was incorrect, because MSY encapsulated American political objectives as well. And while Herrington defended Abstention as being based in conservation, it was in reality a means to allocate fish, between Japan and the U.S.

¹⁰ William C. Herrington, “In the Realm of Diplomacy and Fish: Some Reflections on the International Technical Conference on High Seas Fisheries in the North Pacific Ocean and the Law of the Sea Negotiations,” *Ecological Law Quarterly* 16, No. 1 (1989), 101-118, 115.

¹¹ William Herrington to John Yingling, July 14, 1953, Department of State Memorandum, U.S. High Seas Fisheries Policy, Box 2768, 611.006/50-54, NARA RG 59.

13.2 Science in Foreign Policy, Foreign Policy in Science

When the Rome conference ended, Chapman and Herrington drove to Geneva for the International Law Commission meetings. Cuba's ambassador, Garcia Amador, a member of the ILC, wrote the report on the Rome recommendations. The ILC accepted the "technical" advice from the Rome conference, and MSY was on its way to becoming a legal concept, in addition to its role as a policy objective, and as a scientific principle.

This reinforcing of MSY in different theatres has been part of its endurance. MSY, a theoretical concept, is reinforced by its existence in multiple fields, as policy, as science, and as a legal and binding international construct. The inherent scientific weakness of MSY has been masked by its existence in these other realms. The criticism that was leveled against MSY by participants at the Rome conference, and others, was buried at the conference itself, just as Sidney Holt's paper criticizing MSY was dropped from the collected papers published after the conference. There have been no further attempts to create an international body with binding authority to rule in fisheries disputes. The overall shape of modern fisheries management was set at Rome, on a scientific foundation that was framed by political objectives.

The scientists at Rome could have debated two significantly different courses of action. Should post-war fishing policy adopt a go slow approach and implement restrictions while scientists studied the impact of fishing on the stocks, as Graham and others had advocated? Or should managers avoid making

restrictions, allowing fisheries to develop in a laissez-faire manner, until stocks showed signs of overfishing, and Chapman, Herrington, and Schaefer wanted?. Other questions, too, might have been debated. Was fishing by humans a natural part of predation? Or had E. S. Russell been right in the 1930s when he began the study of a different kind of predation on fish, the growing pressure by man? Graham argued that human predation was different because it could be controlled, and management was needed to control it, both for the health of fish stocks, and for the profitability of fishing, but these ideas were brushed aside in Herrington's agenda.

In short, the "technical conference" was not technical at all. It is clear from the historical record that Herrington, Chapman, and Schaefer had been successful in shaping the agenda to give the Americans as much control of the outcome as possible. Herrington had lobbied the Canadians and the Europeans, nations with well-developed fisheries, to support the U.S. position. The British Ministry of Fisheries was allied with the Americans, in seeking to achieve the objectives of retaining their distant water fleet, and resisting enclosure by smaller, weaker states (specifically Iceland). Other European nations, as well as Japan and the Soviet Union, supported the U.S. position.

Graham's go slow approach, of instituting restrictions before they were needed to slow the catch, held little appeal for countries that were rapidly developing new fisheries throughout the world. Schaefer's Surplus Production Theory dovetailed perfectly with the objectives of expanding fisheries, the idea

that all fish populations had “excess” fish that were not needed for reproduction and could safely be harvested. None of this is to say that Herrington, Chapman, and Schaefer acted from dishonest or insincere motives. But it is to say that during the Rome meeting, they represented the U.S. government, with a political agenda to which they were deeply committed.

MSY was presented as policy to conserve stocks, and that is where much confusion lies, because we no longer use the word “conservation” to mean utilization. MSY was presented as conserving stocks, but it allowed the distant water fleets of developed countries to continue to fish where they pleased in the high seas, and made it extremely difficult for other nations to protest. This decision shaped fisheries science by making its focus the estimating of the critical harvest points needed to establish MSY, a process that resulted in substantial later criticism, and the ultimate failure of the stated goal of conserving fish populations. It shaped the fisheries management process by pushing the American preference for limited, bilateral, or multilateral agreements, usually with limited jurisdiction and enforcement, rather than the creation of an international fisheries agency with broad regulatory authority and enforcement powers. And it shifted the burden of proof from the distant water fishing countries to the poor countries that were unable to fund the science needed for conservation.

13.3 The Three Partial Theories

In his analysis of the Rome conference, Tim Smith argued that it codified what he called the three partial theories of MSY (the work of Beverton and Holt, Ricker, and Schaefer) into a single research directive, estimating the critical point when fishing needed to be controlled. The MSY point was to harvest the maximum number of fish at their maximum weight, so that no fish would be wasted, yet the spawning biomass was protected.

Schaefer's research paradigm formalized a narrow approach that fishery research has been slow to change from. This narrow focus on populations of fish in isolation was reflected in the terms of reference of the many international agreements for the study and management of marine fisheries that were put in place in the late 1940s and early 1950s.¹²

Smith's analysis is correct, but he does not go far enough. The dominant idea that emerged from the conference, especially among the non-scientists who controlled the national positions and thus the votes, was that stocks had a harvestable surplus that scientists would be able to accurately estimate, so that fishing activity could be regulated when it was needed, not before. It was essentially the Progressive idea of management; the government would not interfere with private enterprise, but that the "technical" problem of deciding when regulation would be needed would be performed by experts.

Schaefer's formulation solved one of the most perplexing problems that would face managers: how to determine a fishery's maximum sustained yield, or MSY. His mathematical framework explained the relationship between fishing

¹² Tim Smith. *Scaling Fisheries: The Science of Measuring the Effects of Fishing*. Cambridge: Cambridge University Press, 1994), 335.

effort and catch, and suggested that scientists could estimate the percentage of the stock that could be removed by a single fisherman, while taking into account the stock's ability to increase and the maximum size it could theoretically attain. These estimates could then be used to predict the maximum average yield the stock could attain for any level of fishing effort.¹³ Fishing at this efficient level would be good for the stocks, allowing production to continue year after year. It was practically perfect. Except that it wasn't necessarily true. And it had never been tested.

Michael Graham and D. B. Finn had protested, but events had already moved far faster than the scientists understood. Schaefer's artificial division of research into three stages reflected the idea that there was time for scientists to develop their programs in an ordered manner. Meanwhile, the entire world of fishing was accelerating, as more government and private money was being poured into the industry. The peculiar post-war activity known as fishery development was emerging, with its strong political ties to government, and its economic implications for fishermen. Estimating the size of fish harvests was certainly an important component of fishery management, but it was often overshadowed by other aspects of fishery development, such as hatchery engineering, improvements in gear efficiency, and finding new ways to process and distribute new fish products. Fishery science was only one component of post-war fishery development, and the suggestion that fishing proceed slowly

¹³ James R. McGoodwin. *Crisis in World's Fisheries: People, Problems, and Politics*. (Stanford: Stanford University Press, 1992), 69.

and cautiously did not fit with the post-war objectives of staking claims to new fishery resources. As Daniel Pauly has noted, fishery management goals “often simultaneously include increasing total sustained harvest, increasing exports, increasing employment, improving distribution of benefits among the fisheries and improving the economic efficiency of the industry.”¹⁴ MSY encapsulated all of those goals, within an understanding that fish populations could safely withstand harvest.

A central misunderstanding for the policy makers at Rome was the tendency to underestimate the fishing capacity of the fleet that was being built, and to over-estimate the ability of the fish to continue to reproduce in the face of such enormous fishing pressure. Scientists also over-estimated their grasp of fisheries dynamics, and the basic thrust of the philosophical underpinning of fisheries science. They also assumed an open market, when in fact both rich and poor countries were all involved in substantially subsidizing fisheries, for a variety of social, political, and economic objectives.

13.4 When Overfishing Becomes Habitual

We now know that when a stock is managed for MSY, it often results in growth overfishing, or a level of fishing where younger, smaller fish are taken. If this fishing pattern continues, or becomes habitual, populations respond with

¹⁴ Daniel Pauly, *On the Sex of Fish and the Gender of Scientists* (London: Chapman & Hall, 1994, 102.

declines in the numbers of large adult spawners and low recruitment, a situation known as recruitment overfishing. Prolonged recruitment overfishing during unfavorable environmental conditions had already led to stock collapse.¹⁵ But the scientists at Rome reasoned it was not necessary to understand why the great fish stocks fluctuated, if you could estimate how many of them could safely be harvested each year..

In many ways, the success of MSY lies in its seeming scientific rationality, but also in its simplicity and elegance. As Chapman said when he presented the U.S. High Seas Fisheries Policy in 1949, “the policy is extremely simple, and it is doubtful that there will be any objection to it from any quarters.”¹⁶ It was also appealing for its vagueness. It was obvious by the early 1950s that if international regulations were binding, as the recommendations of the International Whaling Commission were supposed to be, countries could simply opt out of the process and not comply with any regulations at all.

It is generally argued that MSY was a step forward in recognizing that the great sea fishes were exhaustible, and that regulation would eventually be needed to moderate the impact of fishing. However I argue the opposite. MSY created a false sense of security in the minds of the public and politicians, and prevented conservation efforts by single nations, including Iceland, Peru, Ecuador, and Chile. It derailed the recommendations of the

¹⁵<http://www.fishbase.org/Glossary/Glossary.cfm?TermEnglish=recruitment%20overfishing>

¹⁶ Wilbert M. Chapman, “United States Policy on High Seas Fisheries.” Department of State Bulletin, Vol. XX, No. 498, Jan. 16, 1949, 67-80.

ILC, and halted consideration of an international agency to deal with fisheries disputes. And it set up a regime where regional or bilateral commissions were created to oversee harvest, fragmenting efforts to develop a more comprehensive picture of what was going on in the ocean. Little or no research would be done on stocks of little commercial value. Even among identified species, life histories and biology continue to be poorly studied. For all the spectacular advances in biological oceanography during the twentieth century, basic questions about fish and fisheries remain unanswered.¹⁷

The creation of the new commissions also interrupted the research tradition under which American scientists had been operating. This tradition was weak, with authority divided among state and federal agencies that often had different political and economic agendas. The creation of regional commissions typically focused on a particular fish, further fragmenting research. The work of Beverton and Holt, by contrast, had come out of a deep, integrated, research tradition, under a single government unit charged with fishery management. Their work had been done to test a hypothesis, to see how fish responded to fishing pressure, and to use the evidence to craft a management regime that would husband the stocks, yet allow fishing to be profitable for fishermen. MSY, and its critical component, Surplus Production Theory, by contrast, were never systematically tested. And as has been shown, tuna management was inherently political, involving foreign policy concerns for all the countries involved.

¹⁷ Arthur F. McEvoy, *The Fisherman's Problem: Ecology and Law in the California Fisheries* (Cambridge: Cambridge University Press, 1986).

In Herrington's written recollections of the preparation for the Rome meeting, he quoted Chapman's version of the issues involved. Chapman had written in 1989 that Herrington wanted to create an international mechanism that would make it possible to obtain Maximum Sustained Yield from fish stocks in perpetuity:

This came down to the simple word conservation, which even the most unsophisticated delegate thought he understood and was in favor of, and which the most sophisticated fishery-educated delegate also thought he understood and certainly would not oppose. Opposing conservation was, and is, the same as opposing motherhood and being in favor of sin.¹⁸

As Chapman defined conservation, it was in the progressive sense of utilization. "Fish resources cannot be stored in the sea," Chapman wrote in a fourteen page letter to Judge Douglas Edmonds, who represented the U.S. on the International Law Commission. "They die."¹⁹ By claiming their policies were "conservation," the U.S. did what it had been doing since the early days in Bristol Bay, not conserving fish, but conserving the American right to fish.

MSY was policy camouflaged as science.

¹⁸ William C. Herrington, "In the Realm of Diplomacy and Fish: Some Reflections on the International Technical Conference on High Seas Fisheries in the North Pacific Ocean and the Law of the Sea Negotiations," *Ecological Law Quarterly* 16, No. 1 (1989), 101-118, 115.

¹⁹ Wilbert Chapman to Judge Edmonds, April 13, 1955, Edward Allen papers, University of Washington Special Collections, Box 21, Folder "52-58.

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Chapter Fourteen

Fishing “Up” to MSY

There was little, if any, overfishing in any large fishery along the coast. All the questionable cases were being closely observed by scientists and the legal machinery to put into effect and enforce the needed regulations was all ready to put in action when the scientists determined what was needed. The fisheries were in good shape and were being run on the basis of maximum sustained production from each stock.¹

Wilbert McLeod Chapman, 1953

Why was T. S. Huxley, one of the most astute Victorian scientists, not able to see in 1883 the potential of steam trawlers to transform fishing? And why didn't the scientists gathered at Rome in 1955 see more clearly the trajectory that fishing was on? What the scientists and politicians “saw” was that fish stocks were being well-managed and the evidence was that the catch was steadily increasing, some eight percent a year through most of the 1950s.² They had just voted to implement what they thought was a conservation-based regime on the high seas. As soon as biologists, after scientific study, concluded that fish stocks were declining, regulations would be implemented—in the fisheries covered by national and international conventions. But while the commissions would recommend regulations, they would have to be approved by the participating governments, and

¹ Wilbert McLeod Chapman, “The Bering Sea Fisheries,” *Far Eastern Survey*, 22 (4), March 25, 1953, 33-36, 35.

² S.M. Garcia and C. Newton, “Current Situation, Trends, and Prospects in World Capture Fisheries,” in *Global Trends, Fisheries Management*, ed. E.K. Pikitch, Daniel D. Huppert, and Michael P. Sissenwine (Bethesda, Ma: American Fisheries Society, 1994).

government would prove to be reluctant to restrict catches. One of the earmarks of modern fishery management are the bitter disputes over scientific facts, as scientists, managers, and the industry struggle to decipher the evidence they have so painstakingly collected from the sea.³

In the meantime, fisheries could proceed to take the stocks that weren't needed for reproduction, the harvestable surplus. While some of the great stocks were admittedly showing declines, the sea itself was still seen as enormously resilient, capable of producing huge amounts of fish. Writing in 1953, Wilbert Chapman acknowledged that technological advances and greater efficiency made it possible to overharvest fish stocks, but it was a temporary condition that would be rectified when MSY-based management regimes were in place, which would protect fish for those who had earned the right to exploit the stocks:

One after another the great fisheries of the world have approached or are approaching the point where a little careful husbanding will guard their productivity and perpetuate it. Mankind will find those who husband the resources of the sea, like those who husband the resources of the land, must be permitted the fruits of their labor.⁴

As in his 1949 U.S. High Seas Fisheries Policy, Chapman had endorsed what is now called an Olympic fishery, or a derby, that encourages rapid

³ Sheila Jasanoff, *The Fifth Branch: Science Advisors as Policymakers*, (Cambridge: Harvard University Press, 1990), 13; and Alan Christopher Finlayson, *Fishing for Truth: A Sociological Analysis of Northern Cod Stock Assessments from 1977-1990* (St. John's: Memorial University Press, 1994).

⁴ Wilbert McLeod Chapman, "The Bering Sea Fisheries," *Far Eastern Survey*, 22 (4), March 25, 1953, 33-36, 36.

exploitation of stocks. In this conceptualization, the ocean is the ultimate commons, and a fisherman who restrained his actions was at a competitive disadvantage; the fish he saved would be caught by others. This was also true for nations as fisheries developed after World War II. Not to defend the territorial claims of distant waters was to forego fish that would promptly be caught by other boats. But as this dissertation makes clear, the decline of global fisheries was due to the actions of *nations* to retard enclosure and protection of fish stocks, not the actions of individual fishermen.

For Chapman and other scientists at the time, the problem was seen as getting fisheries up to MSY levels, not fishing down to them. And if some of the great stocks needed to be regulated, it was thought that fishing could continue, just at a slightly reduced level, until the stocks recovered, then fishing could increase again. The idea that fisheries were capable of sustaining large catches was still deeply ingrained.

In Chapman's high seas policy of 1949, he clearly believed that the Americans and their free enterprise system had the potential to dominate in both the salmon and tuna fisheries of the Pacific. But in just a decade, all the American cards seemed to melt away. It was the Japanese who established a tuna fishery in the Mandated Islands, using the labor-intensive longline techniques. The Americans needed bait for their primary tuna fishery, and bait was scarce in the equatorial Pacific.⁵ When the Tripartite Treaty was signed in

⁵ Donald L. McKernan to Wilbert Chapman, Jan. 16, 1955. Box 45, Folder 4. Papers of Wilbert M. Chapman, University of Washington Special Collections.

1951, it had been seen as a victory for the U.S., because it established the abstention line, keeping the Japanese 600 miles west of Bristol Bay. But it was the Japanese and the Soviets who had vastly expanded their fisheries in the North Pacific, leaving scraps of the catch for the Americans and Canadian boats, as the inshore salmon fisheries dwindled.

And when the larger picture of fisheries dominance in the Pacific was considered, the Japanese may have lost access to salmon and halibut, but they had won and were able to maintain access to the lucrative American market for tuna. In the meantime, Japanese fishery scientists were sharply pressing the Americans and Canadians to defend their political line in the water, the 170 degree West Longitude line that kept the Japanese high-seas gillnet ships 600 miles off Bristol Bay. The Japanese scientists claimed the line was based on politics, not science.

14.1 Continued Dissent on MSY

The Rome meeting decisively shaped the direction of fisheries science and fisheries management. But the debate among scientists over the appropriateness of MSY as a goal of management had not been completely settled. In correspondence after the conference, Sidney Holt and his superior at FAO, G.K. Kestevan, continued a dialogue with Milner B. Schaefer about his approach to fisheries science. In an Aug. 22, 1956 letter, Kestevan wrote:

The truth is that although Sidney Holt and I greatly admire the apparent simplicity and directness of much of your argument

and the ingenuity with which you are attempting to make the 'population growth curve' idea into a method for practical use, and are conscious of how valuable this could be if you were successful, we both nevertheless find ourselves a little out of sympathy with the principles which appear to be guiding your development of fishing theory. We have found it difficult to set down our objectives logically and courteously, supported by full documentary references and justified by elaboration of an alternative approach, in time for our comment to be of value to you in considering publication of your paper.⁶

In a personal letter to Schaefer a year after the conference, Michael Graham thanked him for sending copies of an unspecified paper. Graham's response is worth quoting at length. He said he was sure that Schaefer's paper was sound.

But the fact is that I am not sympathetic to it, because I think that the problem of fish conservation is not so clear that we can write about it in an authoritative way without running the risk of emphasizing what may in the future turn out to be less important points. For example, I think that yield curves may sometimes be very flat topped or even asymptotic, and I do wonder whether we have hold of sufficient theory to take account of the interaction of fish species, which might be of superlative importance...

You may think that holding such views, I should not have encouraged Beverton and Holt to write a great paper on the theory. But I would say that their paper was an attempt to be exploratory rather than to teach. Perhaps you are right to try and teach, but I am still teaching this: "Find what direction to go in and take a small step that way."⁷

⁶G.L. Kestevan to Milner Schaefer, Aug. 22, 1956. Folder, "Correspondence to Various Groups and Individuals." FAO Archives, RG 61.5 Series A.

⁷Michael Graham to Milner Schaefer May 29, 1956, Box MC 2, Unlabeled Folder. Papers of Milner B. Schaefer, Scripps Institution of Oceanography.

But just as the tools of technology greatly expanded the ability of boats to catch fish, so the new tools of science--statistics, mathematical modeling, population dynamics-- were transforming fisheries science, shifting away from the traditional limnology, the study of fish in their environment. MSY offered an efficient and conservation-based, practical approach to fisheries science.

There were a few scientists who thought fishery biologists ought to be more interested in basic research about the fish themselves. In December of 1953, R. E. Forester, who had pioneered the work on the efficacy of hatcheries at Cultus Lake during the 1930s, wrote to G. L. Kestevan at FAO, commenting on a recent speech at an ICES meeting. Forester wrote that it was imperative that young scientists be educated broadly in the field of marine biology. The current training was too narrow, Forester wrote. "They do not get to realize that the fish is an animal, that its environment is a changing and pulsating cosmos and that the whole problem of fisheries is a most complicated one."⁸

Kestevan replied that he agreed that progress in fisheries would be derived from deeper study of biology. "Nevertheless the responsibility of fisheries biology is to study populations of economic species of organisms with a view to assisting the fishery industries to achieve most effective exploitation of them." There needed to be rigorous control in the pursuit of

⁸ Forester to Kestevan, Dec. 2, 1953, FAO Archives, O-165, RG 61.5, B-1.

proper objectives, and that, as far as the industry is concerned “the satisfaction of a scientist’s scientific conscience in respect of the purity of his motives is rather an irrelevance.”⁹

Even Michael Graham, so incisive in his understanding of the fishing industry, and so conscious that fish stocks were being wasted, thought that the oceans were still bounteous. “It seems that the effect of man on the ocean has been small, that there remain relatively untouched sources of wealth, and that, even if these are greatly exploited in the future, the ocean will remain much as it is and has been during the human epoch,” he wrote in a 1956 paper.¹⁰ The great sea fisheries were exhaustible, but it was impossible to conceive that the basic productivity of the ocean itself could ever be seriously impaired.

Scientists throughout the late 1950s were busily engaged in estimating just how much protein could be harvested from the ocean, and what the sustainable ocean catch would ultimately be. Writing in 1963, biologist A.T. Pruter sounds very much like Wilbert Chapman in 1949, explaining that conservation of marine resources meant catching them:

The term “conservation” as applied to a living resource, such as fish or shellfish, has an entirely different meaning from that applied to a non-living resource such as minerals or oil. The latter are non-renewable. Man must exploit them with reserve, recognizing that once used they cannot be restored. In contrast, failure to use a living resource is to waste it. If not utilized by

⁹ Kestevan to Forester, Jan. 5, 1954, FAO Archives, O-165, RG 61.5 Series A3.

¹⁰ Michael Graham, “Harvests of the Seas,” in *Man’s Role in Changing the Face of the Earth*, William L. Thomas, Jr., ed. (Chicago: University of Chicago Press, 1956), 487-503, 501.

man, fish eventually die of old age or other natural causes. They are continually replaced by new individuals. As long as enough adult fish are left to perpetuate the species, the surplus can be harvested.¹¹

Pruter accepted that some fisheries might be over-utilized, but fishermen could simply move on to other fish: "Many of our present fisheries already are being exploited to or beyond their maximum productivity. Consequently, we will have to expand our harvest of presently underfished resources and begin harvesting unfamiliar species."¹² The ocean itself was seen in much the same terms as Huxley had seen it in 1883, endlessly resilient, capable of regeneration. Fish still had the ability to produce millions of eggs and somehow, despite the ever-increasing catches, man's impact was still considered to be less potent than the natural forces that shaped fish populations. Man not only helped to sustain populations at their most productive levels, he also contributed to creating more fish. It would take another thirty years before the negative impacts of hatchery fish on West Coast salmon runs could be clearly established. The finding remains controversial.

As Canadian zoologist Peter A. Larkin wrote in 1977, the first decade after World War II was the golden age of the MSY.

The literature cracked with new information and new ideas. The solidification of the concept of MSY, its application to fisheries

¹¹ A.T. Pruter, "Conservation of Marine Resources," in *Industrial Fishing Technology*, Maurice E. Stansby and John A. Darrow, eds. (London: Reinhold Publishing Corporation, 1963), 13-21, 13.

¹² *Ibid*, 14.

here, there, and everywhere, was just under way...Briefly, the dogma was this: any species each year produces a harvestable surplus, and if you take that much, and no more, you can go on getting it forever and ever (Amen).¹³

Larkin likened the enthusiasm for MSY to a religion, a shrewd and insightful comment. And like Michael Graham, in his 1956 letter to Schaefer, Larkin's point was that management of the ocean was not as simple as MSY might lead policy makers and the public, but also scientists, to believe.

With the passionate promotion of American scientists and politicians, MSY had gone from an idea about how fishing should be managed to policy, then to science, then to a legal concept. It had indeed become an ideology, taking the maximum amount but no more, conserving the stocks in perpetuity. The weight of the U.S. State Department had been thrown behind this concept of fisheries management, and it was inextricably linked to post-war foreign policy dogma. The Americans had pushed this concept at the technical conference in Rome in 1955. They had imposed it on the Japanese as part of the Tripartite Treaty in 1952. But as the deadline came to re-evaluate the American line in the ocean, the Abstention Line set some 600 miles west of Bristol Bay, the Japanese were pushing the Americans hard for proof that the political line had any scientific validity.

¹³ Peter A. Larkin, "An Epitaph for the Concept of Maximum Sustained Yield," *Transactions of the American Fisheries Society* 106, No. 1 (1977) 1-11, 1.

14.2 The Japanese Critique

The scientists from the Japanese Fisheries Agency were the front-line troops in the battle to expand Japanese fishing rights after the Tripartite Treaty was signed in 1951. The government was investing in new ships that allowed Japanese fishermen to deploy the world's most modern technology in the quest to regain Japan's status as the world's premier fishing nation. If Japan accepted the Abstention Line, it was seen as a precedent for having to accept the Rhee Line, which cut deeply into traditional Japanese fishing territory off Korea. During the Tripartite negotiations, the Japanese had struggled to put the line at 165 degrees west longitude and it had taken the intervention of the prime minister to move the line deeper into the Bering Sea. Now, as the deadline to re-evaluate the line approached, the scientists from all three countries exchanged documents, presenting their research to each other and arguing about what the data revealed. As part of an exchange of documents, the Research Investigation Section of the Japanese Fisheries Agency sent a paper by Tomonari Matsushita, "The Japan-United States-Canada Fishery Treaty," laying out a Japanese version of the dispute with Americans over North Pacific salmon. In the absence of other documents in English that address these issues, I will quote heavily from Matsushita in the next two sections.¹⁴

¹⁴ Tomonari Matsushita, "The Japan-United States-Canada Fishery Treaty." Unlabeled Folder, Papers of Edward Allen, University of Washington Special Collections.

Matsushita wrote that the problems with the fisheries treaty could not be considered without taking into account the problems with MSY. His paper included a section of historical background, where he linked the current dispute over North Pacific salmon with the American reaction to a 1904 incident when Japanese fishing vessels were caught catching salmon in Alaska. This “trivial incident” had received inflammatory coverage in the pages of *Pacific Fisherman*, which had urged government action before “swarms of fishing vessels with little brown men aboard will invade the waters of northern and perhaps even southern Alaska.”¹⁵ The U.S. had used this and similar incidents, such as abandoning the fur seal treaty in 1941 and not participating in whaling regulations as evidence of the “aggressive” character of Japanese fisheries.

Japan had engaged in test fishing of salmon in the high seas of Bristol Bay in 1936 and 1937, as was allowed by international law. Mindful of the friendly relationship with the U.S., Japan had withdrawn its plans to investigate in Bristol Bay. Matsushita acknowledged the war had provided proof of the “vaguely-felt fear” of a Japanese fisheries invasion.¹⁶ It was natural after the war for Americans to prevent Japanese fisheries to threaten the development of their fisheries. This had led to the passage of the Truman Proclamation in 1945. Matsushita expressly linked the Tripartite Treaty as a

¹⁵ Ibid, 1.

¹⁶ Ibid, 2.

“concretization of the Truman Proclamation.”¹⁷ The Proclamation had suggested creating a conservation zone in the ocean, a goal that had been accomplished by the Abstention Line. Matsushita contended it was impossible to consider the treaty without “taking into account the fear of the advancement of Japanese fisheries which has been felt for the last half-century and which is still being felt today.”¹⁸ There was “unbroken current of such thought” embedded in American relations with respect to Japanese fisheries since the defeat of Japan.

The treaty required Japan to voluntarily abstain from catching fish that are being fully utilized, where the catch is regulated, and the fish are objects of scientific study. “It is clear that this treaty was formulated for the purpose of controlling Japanese fisheries, especially the Japanese off-shore salmon fishing activities.”¹⁹ Matsushita said the most problematical of the three conditions for voluntary abstention was maintenance of maximum sustained yield” on salmon. The essence of protection on salmon was the contention that “a more intensified catch will not bring about a substantial increase in the amount of yearly possible sustained catch.”²⁰ This meant the salmon had reached their full limit or were being exploited to their full extent.

Like D.B. Finn, Matsushita argued there was no fixed and unchanging yield, because it varied with changes in environmental conditions. It also

¹⁷ Ibid, 3.

¹⁸ Ibid, 5.

¹⁹ Ibid, 5.

²⁰ Ibid, 6.

differed according to the biological differences among the fish, and with different growth stages. Over time, it was only possible to obtain an average maximum sustained yield which corresponded to average environmental conditions. MSY was impossible to attain on different stocks of fish over time, because it was “but an ideal of fisheries and this ideal or goal is not fixed and invariable but is always variable according to changes in condition.”²¹ What was needed to manage was “a realistic and accurate yard stick, (whereas) a conceptual and inaccurate one is used in judging it.”²²

His analysis concluded that there was great doubt that salmon were completely utilized in northern Alaskan and the Aleutians, where salmon had not yet been exploited. Fisheries outside the Abstention Line focused on sockeye, but did not catch Yukon chinook, so how could Americans argue that all salmon were fully utilized? The Americans had created the line, then begun the research to determine if the line was appropriate. When Canada and the U.S. had begun to jointly manage halibut and Fraser River salmon, studies had been done before regulations were imposed. It was the only way to make the regulations scientific. But regulations had been imposed on Japan, in advance of scientific investigation. Ergo, the regulations were not based in science.

Matsushita also brought up the fact that Japan had negotiated the treaty while under the control of the Occupation, and disputed that

²¹ Ibid, 7.

²² Ibid, 11.

negotiations had been on an equal footing. In addition, the treaty had allowed five years to pass before the line could be evaluated. “As is clear from all this, prima facie this treaty seems to be constructed very scientifically and rationally, but in reality it is composed of extremely political elements.”²³

Matsushita said Japan must fully contest the evidence presented by the Canadians and Americans. How applicable was American and Canadian research conducted in the near-shore, then applied to the high seas Japanese fishery? “I think it is about time that salmon research based on off-shore fisheries should be, and must be, born in Japan.”²⁴

This is a remarkable document in many ways.²⁵ It attempts to place a historical context, from the Japanese point of view, around the re-evaluation of the abstention line. The Americans conceded that the line was political, but they could not concede that their fisheries policy, the theory of MSY, was not based in science. Matsushita’s critique of MSY is as incisive as critiques by Michael Graham, Sidney Holt, G.K. Kestevan, and D.B Finn. But while American scientists may or may not have conceded some of Matsushita’s points, it really didn’t matter, because the policy had been imposed. Once legislation has been created, it is difficult to repeal. MSY not only had the weight of the American government behind it, it had the endorsement of the

²³ Ibid, 16.

²⁴ Ibid, 17.

²⁵ The International North Pacific Fisheries Convention was dissolved in 1993 and replaced by the Convention for the Conservation of Anadromous Stocks in the North Pacific Ocean (NPAFC). I have been in contact with the office in Vancouver, B.C. about further documents during this period, but the Secretariat has been very slow in responding.

Rome conference and the International Law Commission as well. MSY was policy, it was science, and now it was international law. The Japanese critique was self-serving, and it was confined to the INPFC. It did not spark a re-examination of the appropriateness of MSY as the international goal of fisheries management.

14.3 The Japanese Expansion

The Canadian and American scientists submitted their first working papers to the Japanese in 1957, summarizing their argument that salmon stocks qualified for continued abstention from Japanese fishing. The Japanese evaluated the argument and found it lacking. They saw multiple errors, omissions, and unsupported assumptions in the argument. The Americans and Canadians had calculated MSY in a series of reproductive curves, but the Japanese did not think the curves were appropriate. Errors had been downplayed, and more information was needed. The response, by Canadian William E. Ricker, noted that present Alaskan yields were considerably below MSY, and that stocks were at a low abundance. More extensive exploitation of a stock at low yield would further reduce escapements. Neither group of scientists would concede that the other was right.²⁶

²⁶ Roy I. Jackson and William F. Royce, *Ocean Forum: An Interpretive History of the International North Pacific Fisheries Commission* (Farnham, Surrey: Fishing News Books Ltd., 1986), 97.

The preliminary indications were that some Bristol Bay sockeye migrated west of the abstention line, but more evidence was needed to justify moving the line one way or another. Both parties agreed the line was ineffective, but they were unable to agree on where a new line should be drawn (or, in the case of the Japanese, if a new line even should be drawn). The two sides could not agree, but the line remained in effect until 1976, when the U.S. Congress passed the Magnuson Fisheries Conservation and Management Act and declared the 200-mile limit. Japan also declared a 200-mile territorial limit. In 1978, the line was moved to 175 east longitude.

While the scientists were making their critique of MSY and the terms of the Tripartite Treaty, the Japanese government announced it would increase its fishing in the Aleutian area of the North Pacific by more than 63 percent for the 1955 season, to 334 fishing trawlers, from 205. There would be eleven mothership operations and expanded canning facilities.²⁷ They announced negotiations with the Soviet Union to restore Japan's pre-war access to the waters off Kamchatka, and for a resumption of fishing for salmon, trout, and crab in the Sea of Okhotsk.²⁸ Australia had announced in late 1954 that it would permit Japanese pearl fishing in Australian waters on a limited basis, and that Japan had agreed to abide by the provisions of the Australian Pearl

²⁷ *Pacific Fisherman*, February, 1955, 7.

²⁸ *Commercial Fisheries Review*, July, 1954, 51-52.

Fisheries Act and Regulations.²⁹ Japan was once again embarked on substantially enlarging its high seas fisheries, and it was not willing to concede an inch more water than necessary to the Americans.

The Bristol Bay catches continued to slide during the 1950s and the blame was placed squarely on the Japanese. In 1958, the State Department notified Japan it was considering closing Bristol Bay to all U.S. fishing unless the Japanese would limit their salmon fishing on the high seas. The Department of the Interior prepared the regulations to halt fishing completely, and the Japanese agreed to reduce their projected catch from 11 million fish to eight million.³⁰ On June 30, 1958, Congress approved statehood for Alaska and the following year, the state took over salmon fishing management. The sorry state of federal management was one of the factors that pushed the statehood issue.³¹

14.4 The American Crisis

In 1957, the U.S. Fish and Wildlife Service was reorganized into the Bureau of Commercial Fisheries. Donald McKernan, a scientist who had directed the Oregon Fish Commission, was appointed director. In a Seattle speech, McKernan explained that it was necessary to conserve a range of fish from each salmon run, the early, middle, and late portions. This was

²⁹ *Commercial Fisheries Review*, September, 1954, 53-54.

³⁰ Ann Hollick, "The Roots of U.S. Fisheries Policy," *Ocean Development and International Law Journal* 5, No. 1, (1978), 61-105, 96.

³¹ Ernest Gruening, *The State of Alaska* (New York: Random House, 1968), 406.

essentially an extension of the argument W. F. Thompson had made a decade earlier that each run of salmon was highly individualized, even among the same species. McKernan was saying there was variability within each run, and that a broad range of fish needed to be conserved. When this policy was implemented, McKernan said it was obvious that the runs would be restored. “Furthermore, we are looking towards the future; towards the time when we can not only manage a fully restored resource, but when we can predict the fluctuations in abundance of the runs with a high degree of accuracy.”³² The days of the fish traps were numbered, and American fishermen were facing shorter seasons.

The Japanese fishing industry was pushing the Americans on multiple fronts: replacing American canned tuna on grocery stores, negotiating to deliver frozen tuna into American Samoa, where it could be processed and shipped to the U.S. with no tariff, and in scrupulously following the fishery regulations imposed by the International North Pacific Fisheries Commission, as it greatly expanded its crab and flounder fisheries, while the Americans sat and watched. The Japanese and the Soviets signed a North Pacific fisheries agreement in 1956, and the two countries embarked on one of the most dramatic and rapid fishery expansions the world had ever seen.

The Soviet Union had begun fishing heavily off Kamchatka during the war to provide food for troops. The Soviets decided to heavily subsidize the development of a distant water fishing fleet based on a number of factors: the

³² *Pacific Fisherman*, April, 1957, 14.

need for a protein supply that would be cheaper than agriculture, to provide employment, replace imports, and generate foreign exchange. Pacific development was not as great as the effort the Soviets expended in the Atlantic Ocean, perhaps due to the high cost of transporting fish from the Far East and Siberia to the centers of demand.³³ The Americans were concerned that the Soviets would also enter the high seas tuna fishery. They did build an experimental ship, the *Nora*, to explore tuna potential in the Pacific, and they bought two huge 5,000-ton tuna ships from Japan.³⁴ But why enter a fishery where the Japanese so clearly dominated? The Soviets would concentrate on the waters they knew best, the cold North Pacific and the North Atlantic.³⁵

The Eastern Bering Sea fishery had a combined catch of 103 million pounds in 1958 but rose to more than 1.6 billion pounds by 1961. The combined 1958 catch exceeded the total U.S. and Canadian Pacific Coast groundfish catches that year, and by 1961, the Eastern Bering Sea fishery was more than ten times as large as the catches by the Canadian and

³³ Alan Christopher Finlayson, *Fishing for Truth: A Sociological Analysis of Northern Cod Stock Assessments from 1977-1990* (St. John's: Memorial University of Newfoundland, 1994), 32.

³⁴ Georg Borgstrom, *The Hungry Planet: The Modern World at the Edge of Famine* (New York: The MacMillan Company, 1965), 259.

³⁵ Japan and the Soviet Union signed a fisheries agreement in 1956. Three years later, the Soviets began to fish for groundfish and herring in the eastern Bering Sea. By 1962, they had moved into taking Pacific Ocean perch (*Sebastes alutus*) in the Gulf of Alaska and the Aleutians. They proceeded south, off Oregon and Washington, harvesting Pacific hake (*Merluccius productus*). They had 106 factory trawlers fishing on the east coast of the U.S. by 1961, and they pioneered a herring fishery off Georges Banks. The Soviets began trawling the waters off Antarctic in 1969, fishing for finfish and mounting an experimental fishery on krill, the tiny planktonic crustaceans which are estimated to be the largest biomass in the ocean. See Georg Borgstrom, *Japan's World Success in Fishing*, (London: Fishing News (Books) Ltd.), 1964, and William Warner, *Distant Water: The Fate of the North Atlantic Fisherman*, (Boston: Little, Brown, and Co., 1977).

American fleet.³⁶ The large subsidies that had been invested in high-seas fisheries were paying off, with huge catches of fish. The factory processors steadily expanded their range into American and Canadian waters, drawing the same kinds of protests that Latin Americans had been making for decades, that another country was harvesting “our fish.”

Soviet processing ships expanded into American waters in 1961; within the next decade, more than a thousand Communist-bloc ships would be fishing North American Atlantic waters. Their catch was ten times what the New England and Canadians boats were able to harvest. As more and more boats joined the fishery, the total catch was up, but the pattern identified by E. S. Russell, Michael Graham, and W.F. Thompson was repeating itself: the boats were running more hours and fishing more water, but the per boat catch was declining.³⁷

The Americans could only watch as the foreign factory ships appeared off their coast. Thanks to the U.S. position at Rome, there was no mechanism to regulate or control the obviously huge catches. “The U.S. commercial fishing fleet was old and outmoded, unable to compete successfully with fleets of other nations.”³⁸ Where treaties had created commissions, such as in the Northwest Atlantic, the commissions had no ability to control the amount

³⁶Dayton Lee Alverson, A.T. Pruter and L.L. Ronholt, *A Study of the Demersal Fishes and Fisheries of the Northeastern Pacific Ocean* (Vancouver: University of British Columbia Press, 1964), 37.

³⁷ William W. Warner, *Distant Water: The Fate of the North Atlantic Fisherman* (Boston: Little, Brown and Company, 1977), 58.

³⁸ H. John Heinz III Center for Science, Economics, and the Environment. *Fishing Grounds: Defining a New Era for American Fisheries Management* (Washington, D.C.: Island Press, 2001), 24.

of foreign fishing. Decisions to build and license boats came from national governments, not international commissions. As the U.S. continued to import more and more of its fish, there was pressure to enclose at least some American waters from foreign fishing, a position that continued to be opposed by the State Department, as well as the Southern California tuna industry.

14.5 Subsidizing American Fisheries

Support continued to erode internationally for the three-mile limits. With the rapid and extensive expansion of its high-seas fisheries, the Soviet Union took a harder line on a twelve-mile territorial sea. At the Rome conference in 1955, William Herrington had been pleasantly surprised at how the Soviets had supported the Americans in upholding the three-mile limit. With the Soviet twelve-mile decision, fishing, which had popped up so inconveniently in foreign policy issues since 1945, suddenly took a back seat to wider Cold War security concerns. As Chapman wrote from Geneva in 1956, “the white heat on this 12 mile problem has shifted from fisheries to the navigational problem of the Gulf of Aquaba and the Red Sea. It now lies close to the root of the Near East problem.” He went on to say it was clear “that the Department of State, Department of Commerce, and the White House have written off the high seas fisheries of the United States.”³⁹

³⁹ Chapman to John Wedin, Seattle, July 31, 1958. Re Geneva Law of the Sea conference, ATA Files, Box 42, Folder “ATA Correspondence, 1957, Scripps Institution of Oceanography.

American fishermen had always prided themselves on their spirit of free enterprise and their independence from government regulation.⁴⁰ But this was an idealization, based on ignoring the substantial services governments provided, such as research and hatcheries. By the 1950s, with increased competition from low-cost imports hurting fishermen in New England and Southern California, the industry began to argue for government assistance to make them more competitive. "Rather than arguing against agricultural assistance programs, advocates for the fishing industry argued that they should simply get their fair share of the government support."⁴¹ Congress in 1954 passed the Saltonstall-Kennedy Act, which directed that 30 percent of gross receipts from customs duties collected on fishery products be placed in a special fund in the Department of Commerce. It was to be used for marketing and research to help the ailing fishing industry, although the bulk of funds were soon devoted to general operations of the Bureau of Commercial Fisheries.⁴² Congress also passed the Fishermen's Protective Act in 1954, authorizing the government to pay fines levied against American boats seized in foreign waters.

Unlike many other countries, the U.S. had not created direct loans to fishermen to expand the fleet. While fishermen had been eligible for low-interest loans since 1935, the Eisenhower administration found that no boat

⁴⁰ *Pacific Fisherman*, January, 1949. 17.

⁴¹ Michael Weber, *From Abundance to Scarcity: A History of U.S. Marine Fisheries Policy* (Washington, D.C.: Island Press, 2002), 21.

⁴² *Ibid*, 21.

loans had been made. Small Business Administration low-interest loans were authorized in 1956, as the administration responded to complaints from Congress and the states about the growing problems in the fishing industries of both coasts.⁴³ The services that the government did provide to the industry were not considered subsidies, but they were. Certainly government revenues from fishing did not pay the costs of their administration, at either the state or the federal level.

Moreover, there had been one enormous direct subsidy, although it was certainly not seen as a subsidy at the time, and that was the sale of large surplus military vessels. The U.S. military sold between one and two dozen large vessels (between 200-350 feet) to the Seattle and Alaskan fishing industry after the war. The ships had been sold for pennies on the dollar and extensive conversions had installed brine refrigeration systems that would allow salmon and tuna to be frozen for transport from either Alaska or the tropics to the West Coast for processing. But while the giant ships seemed to offer economies of scale and versatility, operating costs were high, as a ship's crew had to be paid, along with the canning crew. The efficiency of the canning operation was compromised by being onboard ship.⁴⁴

If anything, the ex-military vessels had dragged the U.S. fishing industry away from international competitiveness. The Japanese had made

⁴³ Memorandum for Dr. Gabriel Hauge, Nov. 23, 1956, Positive Measures to Ease the Groundfish Situation, Subject Series, Box 94, Folder, "Trade Agreements and Tariff Matters, Fish 94)," Eisenhower Presidential Library.

⁴⁴ *Pacific Fisherman Yearbook*, 1952, 143.

onboard canning viable because it paid its processing crews so little. The Americans had to pay a prevailing wage, and that helped to price them out of the market. The military ships had utilized canning technology, when the international trend was towards a far more efficient and profitable means of preservation, freezing at sea. Finally, as well, there was the whole issue of tariffs.

14.6 Eisenhower and the Fish Tariffs

The primary subsidy vehicle for American fishermen was tariffs, designed to place a high duty on imports to make them less competitive with domestic industries. The industry had not been able to persuade the U.S. Tariff Commission in the early 1950s to give it increased protection. By 1956, the industry was so desperate it once again sought relief. The New England trawl fleet and the Southern California processing industry were reeling. As Wilbert Chapman saw it, the California industry was up against the power of the Japanese government, and it had no choice but to once again seek protection. "We are not sanguine. We have been along these trails before and know them pretty well. But we do not propose to give up our business without letting the Japanese know they have been in a tussle."⁴⁵

During 1956, the Tariff Commission recommended escape-clause relief for New England fishermen, but the State Department refused to agree.

⁴⁵ Chapman to John Quimby, April 10, 1957. ATA Files, Box 42, Folder, ATA Correspondence, 1957, Scripps Institution of Oceanography.

Foreign policy considerations, and a desire to encourage trade relations in Iceland, in hopes of steering it away from selling fish to the Soviet Union, were more important than domestic dislocations. According to the International Cooperation Administration, a 50 percent tariff on fish would “strengthen those elements in Iceland which wish to drive out U.S. NATO troops. As fish goes, so goes Iceland.”⁴⁶

New England fishermen were denied tariff relief, but Southern California tuna fishermen were luckier. The Commission recommended relief on tuna and President Eisenhower issued a proclamation doubling the duty on tuna canned in brine, from 12.5 percent to 25 percent ad valorem, whenever imports exceeded 20 percent of the previous year’s U.S. pack of canned tuna of all varieties. The proclamation followed an agreement by Iceland to withdraw tuna canned in brine from the 1943 trade agreement, and an invocation of the rights reserved by the U.S. in the GATT agreement.⁴⁷ By June of 1956, the White House announced a package of measures designed to help the fishing industry. There was an administrative reorganization, and the U.S. Bureau of Commercial Fisheries was created to take over the responsibilities of the U.S. Fish and Wildlife Service. A broader research program was set up to investigate all phases of the industry and to develop

⁴⁶ Alfred E. Eckes, “Trading American Interests,” *Foreign Affairs* 71 No. 4 (1992), 135-154, 147.

⁴⁷ “White House press release,” March 17, 1956, Papers of Phillip Areeda, Box 9, folder “Tuna Fish (2), Eisenhower Presidential Library.

new resources, improve the efficiency of fishing, and promote new fishery commodities. A \$10 million loan fund was set up to make loans for maintenance, repairs, and equipment of boats, at a three percent interest rate.⁴⁸ A report to Eisenhower in January of 1957 said 88 applications had been made for loans, but the amounts only totaled \$2.5 million.⁴⁹

A review of tariff documents during the Eisenhower Administration reveals that Eisenhower took the entire issue seriously, regularly demanding updates on the fisheries situation from aides. American policy was strongly tilted towards free trade, and Eisenhower was conscious that his decisions had to do what was best for the security of the entire nation, not just fishermen. Between 1948 and 1955, there were 59 applications for relief under the escape clause and Eisenhower only granted five of them.⁵⁰

The tuna situation was complicated by the fact that the American market was now far larger than the U.S. boats could supply.⁵¹ A number of companies, including the Columbia River Packers Association, were importing frozen Japanese tuna for processing. Helping the Southern California processors would hurt companies in Oregon and Washington. Once again, the fragmentation within the fishing industry made it extremely difficult to find any sort of solution. But tuna canned in brine was only one of

⁴⁸ White House Press Release, June 4, 1956. OF 624 Folder 122-I (2), Eisenhower Presidential Library.

⁴⁹ Memorandum, Jan. 4, 1957, Subject Series Box 12, Fish and Wildlife (Fisheries Loans (2)), Eisenhower Presidential Library.

⁵⁰ Margaret E. Dewar, *Industry in Trouble: The Federal Government and the New England Fisheries* (Philadelphia: Temple University Press, 1983), 52.

⁵¹ Draft Bill, July 19, 1955, Papers of Phillip Arceda, Box 9, Folder "Tuna fish." Eisenhower Presidential Library.

the products that were shifting the market towards the Japanese. There was no tariff on Japanese frozen tuna, and the existing tariff on tuna canned in oil was too low. California Rep. Thomas Kuchel joined Washington Sen. Warren Magnuson in August of 1957, introducing a bill to establish import quotas on both frozen and canned tuna.⁵² The bill went nowhere. Chapman wrote about his frustrations:

We had as sound a case as we ever have had or ever will have. All of us in San Diego put our last dime and ounce of energy into its conduct. Upon looking back over that conduct I could discover no obvious flaw in it. I do not know yet of any important thing that was left undone nor of consequential error in commission. Yet with every ounce of effort and dime of funds we could rustle up we had not even made a slight impression. In the last analysis we made no more of a dent in the implacable opposition of the Executive Branch of Government than a twenty-two caliber short bullet would make against the turret of a sixteen inch Naval rifle. To get started on our path required action by the House Committee on Ways and Means. We could not even get a hearing there, much less action.⁵³

The letter went on to detail that the Japanese had abandoned voluntary limits and had expanded their tuna fishery into the Atlantic. More frozen fish poured into the U.S., at low tariffs, and the prices paid to fishermen continued to slide.

It was clear to American tuna fishermen that they were being sacrificed to create jobs for Japanese fishermen, but they were unable to do anything about it. As the decade wore on and the cannery jobs onshore dwindled,

⁵² *San Diego Union*, Aug. 8, 1957

⁵³ Chapman to Oscar Strackbein, Dec. 5, 1958. ATA Files, Box 42, Folder ATA Correspondence, 1957, Scripps Institution of Oceanography.

American tuna fishermen continued to chase tuna on the high seas. Between 1954 and 1960, Congress enacted a series of laws and directed agencies to create programs to address fisheries problems. Early laws provided funds for research, loans for vessel owners were adopted in 1956, and a program of vessel construction subsidies began in 1960. By the mid-1960s, there were programs on safety, training of fishermen, research and development, loans and vessel construction subsidies.

In her 1983 study of the New England fishing industry, historian Margaret Dewar wrote that programs designed to increase the demand for fish and decrease industry costs had little effect “because they were incorrectly conceived, badly implemented, and too small to cope with very large problems.”⁵⁴ The real problem was that there were already way too many boats catching too few fish.

Having constructed an industry-government apparatus to build a fishing fleet, tinkering at the edges to increase efficiency and find new fish to process only exacerbated the pressure on the stocks, accelerating a downward spiral. California sardines had virtually disappeared by 1953.⁵⁵ Canneries in Southern California were closing. The failure of federal managers to manage the salmon in Alaska was a potent issue in pushing the issue of statehood, and the runs were not in better shape in Washington, Oregon, and California. By 1963, the salmon situation was so bad the

⁵⁴ Margaret Dower, *Industry in Trouble: The Federal Government and the New England Fisheries* (Philadelphia: Temple University Press, 1983), 83.

⁵⁵ *Commercial Fisheries Review*, January, 1955.

governors of the west coast states met with officials from British Columbia to come up with a plan to re-invigorate the ailing salmon runs.⁵⁶ Even at the International Pacific Halibut Commission, the shining example of good management and conservation for both Canada and the United States, the length of the season was steadily shrinking because so many boats were participating in the harvest. More and more people were going fishing. Limits on the number of licenses were another two decades away.

The political apparatus to build fishing boats and create processing jobs was firmly established. Fishing jobs expanded from the primary sector of fishing itself to secondary and tertiary industries. University scientists were working on ways to make fishing more efficient, to process a larger share of the catch, and to find new ways to use fish that had not traditionally been marketed. Fishing was becoming a larger and larger global enterprise. New stocks were being found in all corners of the world. The poorer nations still railed at the foreign fishing off their coasts, but there was nothing they could do about it in the short-term. Decisive action to control some of the fishing would have to wait until the stocks collapsed. In the meantime, technology continued to increase man's ability to catch fish.

⁵⁶ Report of the Second Governors' Conference on Pacific Salmon, "Second Governors' Conference on Pacific Salmon" (paper presented at the Second Governor's Conference on Pacific Salmon, Seattle, Jan. 7-10, 1963 1963).

14.7 The U.S. Tuna Industry and Japan

The price structure for American tuna collapsed in 1954. Fishermen accepted a \$20 per ton cut in the price of tuna in July, another \$20 cut in April, and a \$40 cut in August, a 23% decline in revenues to the boats during a 13-month period. There had been 214 clippers working out of San Diego in 1951; by 1955, there were 160. The price for tuna had been \$330 a ton, but it was cut to \$250 a ton. When Ecuador increased its license fees, fewer American boats decided to fish off Ecuador.

“At present there is no tuna industry of consequence in Ecuador, and there will not be one so long as 250,000 tons of tuna per year are caught in Japan,” Chapman wrote. “The tuna industry in Peru is regressing rather rapidly and there does not appear to be any relief in sight for it.”⁵⁷ By June of 1959, Chapman himself was about to leave the American Tuna Association, to work for the Van Camp Corporation.

The failure to enact protective tariffs against cheaper imported fish eroded the processing jobs in San Diego and San Pedro. With new canneries in American Samoa and Puerto Rico, more and more tuna was processed elsewhere. American boats went on to pioneer tuna fisheries in the Atlantic and Indian Oceans, and off the West coast of Africa. But with the processing jobs located elsewhere, the industry’s political base steadily eroded. As more

⁵⁷ Chapman to Willard B. Cowles, March 16, 1955, Box 21, Folder “52-58.” Papers of Edward Allen, University of Washington Special Collections.

and more foreign factory processing ships showed up off New England and Alaska during the early 1960s, the pendulum began to swing towards a 200-mile limit, further weakening the tuna industry. The fishery that Wilbert Chapman had imagined from his desk at the California Academy of Sciences in 1945, with American boats dominating the fishery in the equatorial Pacific Ocean, remained a dream that American tuna boats would be unable to turn into a reality.

More countries were exporting fish to the U.S. Before 1949, shrimp came from 10 countries; now it was exported by 23 countries. Tuna was imported from eighteen countries.⁵⁸ Japan exported 141,000 mt of seafood products to the U.S. during 1954, valued at \$74.2 million. The U.S. was the largest buyer of Japanese fish products and the largest single item was frozen tuna.⁵⁹

The future seemed bleak for Southern California tuna fishermen. But a technological revolution was just around the corner. San Pedro seiner Mario Puretic, after years of experimenting, perfected the hydraulic power block, allowing a tuna net to be hauled in mechanically, instead of by hand. One of the first boats to install one was San Pedro's largest seiner, the *Anthony M*, owned by Anton Misetich.⁶⁰ Misetich put the first nylon net on the *Anthony M*

⁵⁸ *Commercial Fisheries Review*, July, 1955, 43.

⁵⁹ *Ibid*, 63.

⁶⁰ Thomas Wolff, *In Pursuit of Tuna: The Expansion of a Fishing Industry and its International Ramifications—The End of an Era* (Tempe: Arizona State University Press, 1980), 8.

in 1956. It was 410 fathoms long, 34 fathoms deep, and it cost \$38,000.⁶¹ The power block greatly facilitated the development of purse seining in the open ocean, especially as diesel engines grew more powerful and could haul larger nets. The growing use of purse seines met the demand for fish meal and oil, and facilitated the shift from bait boats to purse seines. The transition freed the fleet from the onerous and risky bait fishery that had brought so much conflict with Latin and South American countries.⁶²

The tuna industry was increasingly shifting away from Southern California. During the 1950s, ninety percent of newly-built tuna vessels were registered out of Puerto Rico, with its favorable tax laws. By the 1960s, only 38.4 percent of the fleet was based in California. Repairs for the Caribbean fleet were carried out in San Juan, Panama City, and Norfolk, not San Diego or San Pedro.⁶³

14.8 The Tuna Fleet and Latin America

No sooner had William Herrington wound things up in Rome and Geneva, when further negotiations began with Latin America. There was another conference in Santiago in 1955, from Sept. 14 to Oct. 5, to negotiate a fisheries agreement. The U.S. wanted an agreement that was in line with

⁶¹ *Pacific Fisherman*, April, 1956, 38.

⁶² August J. Felando, "California's Tuna Clipper Fleet:1918-1963, Part 3," *Mains'L Haul* 33, no. 3 (1997).

⁶³ Thomas Wolff, *In Pursuit of Tuna: The Expansion of a Fishing Industry and its International Ramifications—The End of an Era* (Tempe: Arizona State University Press, 1980), 15.

the recommendations that came out of the Rome conference, that fishing be studied and that as soon as evidence of depletion became known, the fishery could be regulated. Peru, Ecuador, and Chile rejected the idea.⁶⁴ The parties could not reach agreement and negotiations were suspended. The U.S. wanted to send the territorial dispute to the International World Court, sitting in The Hague.

The State Department described the disagreement as being over the role of the coastal state in enforcing conservation regulations. Ecuador, Peru, and Chile called it regulating foreign over-fishing. To the Americans, it looked like the three countries wanted to claim at least sixty miles of regulatory territory, which would cover the most desirable fishing grounds. Further regulations would cover the remainder of the 200 miles. In addition to claiming increased regulatory authority, the U.S. saw the three countries as trying to establish a preferential position with respect to fish quotas.⁶⁵

The U.S. also objected to a new theory put forward by the Latin Americans, the “eco-system” or “biomass” theory. This postulated an interdependence of life on the coastal land with the living communities of the sea. The geographic, hydrographic, climatic, and other environmental factors influencing both, created “a relationship of such unity as to serve as a scientific basis for the legal claim of coastal States to preferential rights over

⁶⁴U.S. Department of State, “Santiago Negotiations on Fishery Conservation Problems,” Department of State, 1955, 5.

⁶⁵ U.S. Department of State, “Santiago Negotiations on Fishery Conservation Problems,” Department of State, 1955, 7.

adjacent waters.”⁶⁶ The theory outlined a relationship between the anchovies, the cormorants that fed on them, and the guano the birds produced. Depletion of the anchovies led to depletion of the birds and the guano. It also postulated that small organisms, such as plankton, sardines, and sprat, lived near the shore and provided food for the larger pelagic fish. Thus the continental shelf waters were more productive than offshore waters. The U.S. saw this idea of a perfect unity and interdependence as having “at most, limited, if any, validity.”⁶⁷

The theory was debunked by Milner B. Schaefer, director of the Inter-American Tropical Tuna Commission, who explained that productivity near Peru was based more on the upwelling of ocean currents than on the productivity of the continental shelf.⁶⁸ This attempt to define a relationship between the land and the sea, and the fish and birds, had little resonance with the ideas of statistics, mathematical modeling, and population dynamics of Western fisheries science at the time.

Peru, Ecuador, and Chile saw the U.S. as wanting to be free to fish without restraints anywhere in the world. The U.S. saw this as a misrepresentation of its position, which was to promote conservation; after all, the U.S. had set up the IATTC to establish the science that would be needed

⁶⁶Ibid, 9.

⁶⁷U.S. Department of State, “Santiago Negotiations on Fishery Conversation Problems,” (Department of State, 1955), 9.

⁶⁸ Thomas Wolff, *In Pursuit of Tuna: The Expansion of a Fishing Industry and its International Ramifications—The End of an Era* (Tempe: Arizona State University Press, 1980), 50-51.

to regulate the tuna harvest, should fishing develop to a point where regulations would be needed.⁶⁹ When it became obvious that the Latin countries would not budge on the issue that their territorial rights be recognized by the U.S., negotiations broke off.

14.9 The Launch of the *Fairtry*

Fishing was about to be dramatically transformed. The new era began on a brisk March morning in 1954 when the *Fairtry* splashed down the marine ways at the John Lewis shipyard in Aberdeen, Scotland. Owned by Christian Salvesen Ltd., the British and Norwegian whaling company, the ship had the stern ramp of a whale factory trawler, stainless steel Baader filleting machines from Germany, and multiple freezers from Birdseye, the American frozen food company.⁷⁰ It was 280 feet long, cost \$4 million and could fish in a force ten gale (winds of up to 63 miles an hour).⁷¹ Six years in development, the *Fairtry* brought together, for the first time, modern fish catching, processing, and freezing capacity, and it could stay at sea for weeks at a time. Even its fish waste was utilized onboard, turned into meal. Its first voyage was to the Grand Banks of Newfoundland to fish for Atlantic cod. It returned in July, after 65 days of fishing, with between 400 and 500 tons of fish, 86 tons of meal, and about 4,200 gallons of cod liver oil, still an important source of vitamins.

⁶⁹ U.S. Department of State, "Santiago Negotiations on Fishery Conversation Problems," (Department of State, 1955), 11.

⁷⁰ D.H. Cushing, *The Provident Sea* (Cambridge: Cambridge University Press, 1988), 234.

⁷¹ Michael Harris, *Lament for an Ocean: The Collapse of the Atlantic Cod Fisheries: A True Crime Story*. (Toronto: McClelland & Stewart, Inc., 1998), 53.

“To make a ship like this a paying proposition, we have to catch a lot of fish, and that means we have to go to distant grounds like Greenland and Newfoundland,” its captain said after the voyage.⁷²

But there was a development that, in retrospect, was ominous. *The Fishing News* reported on Oct. 29, 1954, that the *Fairtry* would have to modify its processing equipment. “More machinery for handling smaller fish would be installed for the next trip.”⁷³

The first of two Soviet factory processing clones, the *Pushkin* and the *Sverdlovsk*, arrived off Newfoundland in 1956. Two dozen *Pushkin*-type factory ships were fishing in another two years.⁷⁴ They were followed by similar ships, and even larger ones, as Spain, France, Germany, Portugal, Denmark and several Eastern European countries built their own versions of the *Fairtry*. The shock was not that cod stocks finally collapsed, it is that it took so long for it to happen. Several large year classes, in some cases twenty-five times more fish than were recruited during the previous decade, buffered the impacts of the factory trawler fishing during the 1960s.⁷⁵ High recruitments from the 1978-81 year classes boosted harvest levels, but with the progressive loss of older and larger fish, there was a collapse in the stock age structure.⁷⁶ It was not until the 1980s that Atlantic cod, a species that had

⁷² *Commercial Fisheries Review*, October, 1954.

⁷³ *The Fishing News*, Oct. 29, 1954.

⁷⁴ D. Cushing, *The Provident Sea* (Cambridge: Cambridge University Press, 1988), 235.

⁷⁵ Helen M. Rozwadowski, *The Sea Knows No Boundaries: A Century of Marine Science under ICES* (Seattle: University of Washington Press, 1988), 177.

⁷⁶ Jeffrey A. Hutchings, and Random A. Myers, “The Biological Collapse of Atlantic Cod Off Newfoundland and Labrador,” in *The North Atlantic Fisheries: Successes, Failures &*

sustained humans for hundreds of years, was finally gone. It was almost a hundred years after T.S. Huxley had declared the great stocks of fish were inexhaustible.

The ships contained new technology developed during the war. Recording echo sounders allowed fishermen to identify schools of fish below them in the water, so they could set their nets more precisely. Radar expanded the ability to fish at night and in fog. Sonar allowed them to search the waters ahead of them, a technique that was especially useful for purse seines and mid-water trawlers. The mid-water trawl allowed the towing of the trawl at intermediate depths, between the surface and the sea bed. This was initially done with two boats, one to hold each side of the net, and the vessel with the more powerful engine to tow it.⁷⁷ With the increased industrial capacity, fish prices continued to be low, as imports from other countries squeezed American processors and fishermen.

14.10 The Law of the Sea, 1958

The International Law Commission had established a body of recommendations to deal with fisheries and questions of the continental shelf, but it was obvious that further issues were emerging. On Feb, 21, 1957, the Eleventh General Assembly of the United Nations passed a resolution to hold

Challenges, ed. Ragnar Arnason, and Lawrence Felt (Charlottetown, PEI: University of Prince Edward Island Press, 1995).

⁷⁷ James R. Coull, *World Fisheries Resources* (London and New York: Routledge, 1993), 46.

a conference that would look at legal, technical, and political aspects of the sea. The first Law of the Sea Conference opened March 11, 1958, in Geneva. The countries that participated claimed territorial seas ranging from three to 200 miles.⁷⁸ As had been evident in 1956, fisheries had been firmly shifted to a back burner. William Herrington again took up the campaign to find a forum to uphold the Abstention Principle, but it was opposed by the Soviet Union. The Soviets continued to push for a twelve-mile sea, but failed to get a majority vote. Herrington wrote in 1989 that most Europeans agreed the U.S. abstention concept was sound, but there was concern that it could be used to exclude Europeans from fishing off the coasts of other countries. Canada and Iceland, unhappy over foreign ships taking so much cod, could be counted on to use such a principle in an attempt to enclose their waters from foreign competition. Once again, Herrington was forced to pull the principle when it became obvious that it did not have the votes to pass.⁷⁹

New issues were also emerging, further marginalizing a central role for the fishing industry in the protracted Law of the Sea negotiations. The mining of mineral nodules from the deep seabed was emerging as a new source of contention. "This stimulated two very different agendas. First, the pressure from coastal states wanting to establish ownership of the fish resources off their shores continued to intensify in tandem with the advances in fishing

⁷⁸ Thomas Wolff, *In Pursuit of Tuna: The Expansion of a Fishing Industry and its International Ramifications—The End of an Era* (Tempe: Arizona State University Press, 1980), 80.

⁷⁹ William C. Herrington, "In the Realm of Diplomacy and Fish: Some Reflections on the International Convention on High Seas Fisheries in the North Pacific Ocean and the Law of the Sea Negotiations," *Ecological Law Quarterly* 16, No. 1, (1989), 117.

technology and increasing pressure on fish stocks. Second, opposition arose against the possibility that certain states or private companies would get hold of the mineral resources of the deep seabed."⁸⁰

14.11 The Further Life of MSY

Just as "conservation" could mean different things to many different people, so MSY came to mean different things to different groups of people. Its existence in multiple forums led to its wide acceptance as an appropriate goal for fisheries management. As far as policy makers went, the scientific nuances were dropped and MSY came to embody a relatively simple idea, of taking the scientifically determined amount of fish, without impairing the ability of fish populations to reproduce.

Canadian zoologist Peter A. Larkin suggested MSY was oversimplified when it was sold to administrators, which scientists did with a clear conscience, "for they all knew that the main idea was correct and it was only necessary to do a bit more research, to get a bit more experience, and then the basic theme could be appropriately fine tuned to perfection."⁸¹ This idea, that with additional data the models could be fine-tuned and made more accurate, is an enduring belief in fisheries science. As Alan Finlayson pointed

⁸⁰Rognvaldur Hannesson, *The Privatization of the Oceans* (Cambridge, Mass: MIT Press, 2004), 34-35.

⁸¹Peter A. Larkin. "An Epitaph for the Concept of Maximum Sustained Yield." *Transactions of the American Fisheries Society*, 106, No. 1, 1977. 2.

out in his examination of the collapse of Atlantic cod, even very competent scientists seem to believe “that the tools just need to have their blades sharpened a bit, or a new attachment here and there.”⁸²

Larkin’s epitaph was written as the U.S. Congress adopted the Fisheries Conservation and Management Act in 1976, creating the Exclusive Economic Zone and expanding the territorial sea from three to two hundred miles. A central part of the legislation was the adoption of MSY as the goal of American fisheries management. The MSY language was drafted by an attorney, Christopher M. Weld, executive director of the National Coalition for Marine Conservation. His bill, H.R. 8265, was introduced into the House of Representatives on June 26, 1975. Four years later, Weld wrote an article on the experience for *Fisheries*, the American Fisheries Society bulletin, on the results of the legislation. On the subject of MSY, Weld wrote:

It is highly doubtful that either Congressional staff personnel responsible for drafting the definition or the Committee members who approved it has more than a tenuous grasp of the concept. More than once in Committee session the sentiment was expressed, “Well, you’ve got to start somewhere,” as if MSY were a fixed reference point. Unfortunately, it is not. MSY is a theoretical rationale based on a hypothetical ratio. In other words, as a reference point, MSY is very slippery. Probably if the non-biologists responsible for the incorporation of MSY into the Act thought about it at all, they envisioned MSY as the maximum number of fish that could be harvested from a fishery on a continuum basis without doing harm to the fishery—if the fish stocks were at optimum levels.”⁸³

⁸² Alan Christopher Finlayson, *Fishing for Truth: A Sociological Analysis of Northwestern Cod Stock Assessments from 1977-1990* (St. John’s: Memorial University Press, 1994), 149.

⁸³ Christopher M. Weld. “The First Year of Federal Management of Coastal Fisheries: An Outsider’s View.” *Fisheries*. 4(2) 13-14.

In 1978, Sydney Holt and L. M. Talbot suggested that MSY was a useful evolutionary step on the way to conservation of marine resources.

However, like some other simplified concepts, maximum sustainable yield has become institutionalized in a more absolute and precise role than intended by the biologists who were responsible for its original formation.⁸⁴

Despite the scientific and economic criticism of MSY, a 1988 analysis found that it continued to be used in management applications. It was a simple concept that was readily understood by the fishing industry, administrators, and managers. The analysis concluded there was no operational rival that could be used to predict the consequences of harvest on fish populations.⁸⁵

By 1976, as the U.S. Congress sought a scientific basis for expanded fisheries management, it is likely that there was little question of using anything besides MSY. Two decades after its adoption at Rome, the scientific objections of Michael Graham and D.B. Finn had been forgotten. The Japanese critique had been ignored, even as scientists continued to argue about the sharing of North Pacific salmon. Scientists had, in some cases, been able to arrive at critical points that showed fishing needed to be regulated, but halting the catch would prove as difficult as it had been in the 1920s and 1930s, as regulators sought to rein in the California sardine harvest, the halibut catch, and the fish traps in Bristol Bay. If this history of

⁸⁴ Sidney Holt and L.M. Talbot, 'New Principles for the Conservation of Wild Living Resources,' *Wildlife Monographs* 59 (1978), 25.

⁸⁵ Willard E. Barber, "Maximum Sustained Yield Lives On," *North American Journal of Fisheries Management* 8, No. 2 (1988) 153-157, 153.

Pacific fisheries shows one thing, it is that science, politics, economics, and technology have always been intertwined, and they always will be. What is important is to have a realistic evaluation of the strength of the science, which is often used to gird the political, economic, and social decisions. In the case of MSY, the science is dangerously weak, and its adoption was driven much more by foreign policy goals than by a sober evaluation of the merits of the scientific theories.

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Conclusions

The world does not stand still while scientists put their minds in order.
Michael Graham¹

The collapse of global fish populations over the last century is often evoked as the ultimate example of the tragedy of the commons, the disaster that is wrought by individuals acting in their best interests and causing collective catastrophe. But I contend that the collapse of world fisheries was not caused by individual fishermen rushing to harvest. Instead, it was the result of deliberate policies adopted by the distant water fishing nations in general, and the U.S., in particular, to promote and expand global fisheries, not only for the fish, but for territorial reasons that were bound with foreign policy concerns during the Cold War. The U.S. pushed for (and other distant water nations agreed) to a fisheries policy of taking fish as quickly as possible, until critical biological points were estimated, then applying measures to slow or restrict the catch. The practical effect of this policy was that distant water nations fished unhindered until countries began expanding their territorial limits to 200 miles during the 1970s. The policy greatly facilitated the rise of an industrial, global fishing system, with fishing capacity that far exceeded the ability of stocks to reproduce.

¹ Michael Graham, "Overfishing," Proceedings of the United Nations Scientific Conference on the Conservation and Utilization of Resources." *Wildlife and Fish Resources*, 20 (4), 1951.

These economic and political policies were sold as being scientifically sound, based in what is known as Maximum Sustained Yield. This was an essentially American policy construct, born out of territorial disputes over fisheries in the Pacific. When the State Department in 1948 established the position of fisheries attaché, fisheries science became a tool of foreign policy. The U.S. High Seas Fisheries Policy, announced in 1949, established the goal of making possible “the maximum production of food from the sea on a sustained basis year after year.”² Between 1949 and 1955, the U.S. maneuvered to have MSY declared the goal of international fisheries management. These decisions have decisively shaped both the direction of fisheries science and the fisheries management process that we know today.

The policy formalized an understanding that went back to the start of the U.S. Fisheries Commission in the 1880s, and the utilitarian idea of taking as many fish as could be harvested, but leaving a sufficient number to spawn and maintain the runs, so the harvest could continue undiminished for perpetuity. While the policy sounds simple and ultimately practical, implementation has most often resulted in the harvest of more fish than the stocks can sustain. Scientists have tended to underestimate harvest and to over-estimate how many fish can be taken. Implementing MSY has meant that critical points of concern—harm to the stock’s productivity—has to be established before fishing can be restricted or halted. Fishing usually

² Wilbert Chapman, “United States Policy on High Seas Fisheries.” *Department of State Bulletin*, Vol. XX No. 498, Jan. 16, 1949, 67-80.

continues, albeit at a reduced rate. Perhaps the greatest problem with MSY has been the gloss of accuracy and precision that it has placed on what is essentially a process fraught with uncertainty and imprecise knowledge.

The adoption of the policy as the goal of American fisheries in 1949 was expressly political. Historical documents show that when MSY was adopted as the goal of international fisheries management, at a conference in Rome in 1955, it was intended to prevent Peru, Ecuador, and Chile from enacting regional law that would have impeded the ability of other countries (especially the U.S.) from freely traveling in their waters and harvesting their fish. The U.S. and other distant water nations used the concept of the freedom of the seas and its expression in the three-mile limit to hold off, for as long as possible, the enclosure of the seas, and to prevent smaller, poorer nations from restricting their ability to catch as many fish as possible. The adoption of MSY at Rome meant that boats from distant water countries could continue to fish off the countries of less developed nations, retarding for another two decades the enclosure of the oceans for fisheries management purposes.

Embedded in this adoption of MSY was the belief that fishing was good for fish stocks: that the dynamics of fishing stimulated the growth of young fish, as older, slow-growing fish were thinned. The most significant component of MSY was Surplus Production Theory, and the idea that fish not needed for reproduction could safely be harvested. But this presumption was essentially untested and therefore unproven.

Yet, this assumption was embedded in the American policy position at Rome. Three American scientists—Wilbert McLeod Chapman, William C. Herrington, and Milner B. Schaefer—were intimately involved in the development of post-war American fisheries policy, and the shaping of its science. As this dissertation has shown, their most decisive actions were motivated primarily by political objectives, rather than by scientific ones. The idea of surplus production became part of the conceptual framework of American fisheries scientists.

MSY was adopted as the powerful technologies developed during the war were being transferred to the fishing industry, a transformation that was greatly accelerated by the government money poured into the industry. It was a time of enormous optimism about the ability of science to shape and control the natural world. In both the U.S. and the Soviet Union, governments had embarked on ambition programs of building dams and moving rivers.³ Technology could be harnessed to exceed natural limits.⁴ For more than a hundred years, there had been extremely optimistic expectations about the amount of protein that could be harvested from the oceans.⁵ Now, scientists believed they were on the verge of not only understanding the secrets of the sea, but of controlling ocean processes for human ends. Nutritionists were perfecting a pellet that could be fed to salmon fingerlings in

³ Marc Reisner, *Cadillac Desert* (New York: Viking Press, 1986) and Loren R. Graham, *The Ghost of the Executed Engineer: Technology and the Fall of the Soviet Union* (Cambridge: Harvard University Press, 1993).

⁴ Paul Hirt, *A Conspiracy of Optimism Management of the National Forests since World War II* (Lincoln: University of Nebraska, 1994).

⁵ Daniel L. Bottom, "To Till the Water: A History of Ideas in Fisheries Conservation," *Pacific Salmon and Their Ecosystems, Status and Future Options*, Deanna Stouder, Peter A. Bisson, and Robert J. Naiman, eds. (New York: Chapman and Hall, 1997), 569-597.

hatcheries, paving the way for an enormous expansion of the hatchery system throughout Oregon, Washington, Alaska, and later British Columbia.⁶ The Rome conference had implicitly endorsed all such objectives, declaring,

The immediate aim of conservation of living marine resources is to conduct fishing activities so as to increase, or at least maintain, the average sustainable yield of products in desirable form. At the same time, wherever possible, scientifically sound positive measures should be taken to improve the resource.⁷

But as Canadian journalist Michael Harris has written, “Like a Sorcerer’s apprentice, we were on the verge of using the black magic of technology to make a desert of the sea.”⁸

Between 1949 and 1954, scientists in three countries—the U.S., Britain, and Canada-- had published mathematics-based theories that attempted to quantify the impact of fishing on fish populations. The Yield per Recruit Theory, by Raymond Beverton and Sidney Holt, dealt with estimating the yield from each cohort of a fish population. The Spawner and Recruit Theory, by Canadian William Ricker, estimated the optimum number of spawners for each year class of fish. And Surplus Production Theory, developed by Schaefer, estimated the maximum total harvest of fish every year from a standing population.⁹ Biologist Tim Smith argued that after the

⁶ Japan and the Soviet Union also greatly expanded their hatchery system during this period, but mostly for pink and chum salmon, which are released shortly after the eggs hatch. West Coast hatcheries raised coho and salmon, which are held for a period of time at the hatchery. Early hatcheries could not adequately feed smolts until the development of the Oregon Moist Pellet in the late 1950s.

⁷ Memo, D.B. Finn to FAO Director General, May 19, 1955, FAO O-163 RG 61.1, Series C3.

⁸ Michael Harris, *Lament for an Ocean* (Toronto: McClelland & Stewart Inc., 1998). 64.

⁹ Tim D. Smith. *Scaling Fisheries: The Science of measuring the effects of fishing, 1855-1955*. (Cambridge: 1994) Cambridge University Press. 3.

Rome conference, these partial theories dominated fishery research for more than four decades but biologists were unable to find a way to unify them into a comprehensive management regime.¹⁰

I have contended that the three partial theories could not be successfully unified in a comprehensive scientific theory because MSY was *policy* camouflaged as *science*. While the Rome conference was billed as being scientific and technical, it was, in fact, expressly political. It had been engineered by Americans to blunt territorial claims against American boats by Latin America, which was moving to enclose its waters to regulate American fishing. There were extensive consultations between the Americans and most of the major European countries before the meeting. Voting was done by political representatives, not scientists. William Herrington, who headed the U.S. delegation, certainly qualified as a scientist as well as a diplomat, but his actions at Rome explicitly supported American political objectives.

In working to create a world where distant water fishing could continue without restrictions, policy makers made decisions that decisively shaped fisheries science. They expressly rejected a more conservative approach to fishing, one that was thoroughly grounded not only in theory, but in data and the results of fifty years of European fishing experience. When Britain's chief fisheries scientist, Michael Graham, set Beverton and Holt to work in 1947 to come up with a theory about the impact of fishing on fish populations, he started with a hypothesis: a conservative

¹⁰ Tim D. Smith, *Scaling Fisheries: The Science of Measuring the Effects of Fishing, 1855-1955* (Cambridge: Cambridge University Press, 1994), 3.

fishing policy, with restrictions introduced as scientists studied the interactions between fishing and fish populations, would result in greater social benefits. Catching larger fish would lower costs for fishermen and increase their profits. Beverton and Holt's pioneering work was published three years later, laying the mathematical foundation that established the impact of fishing on fish stocks.

But Graham's preferred course of action—the introduction of restrictions as a fishery was growing—supported the political positions of Peru, Ecuador, Chile, which were attempting to restrict fishing off their coasts. The Latin Americans had claimed for two decades that bait stocks were being overfished by the Americans, a notion that was completely rejected by American officials (despite concerns by tuna fishermen, going back to the 1930s, about the difficulty of finding bait, and the post-war collapse of California sardines).

In an effort to avoid any infringement on the Cold War objective of open seas and open skies for American ships, naval vessels, submarines, airplanes, and fishing boats, the U.S. promulgated a scientific policy that fishing could only be restricted if there were signs of decline in the stocks—something that would take years of study to establish. In the meantime, the American tuna fleet could continue to fish for bait off Latin America. The British (and a host of other European nations) could continue to fish off Iceland and Newfoundland. By the 1960s, huge foreign fleets from the Soviet Union and other countries would be allowed to fish off the East

and West coasts of the U.S. It would take until 1976 for most countries to expand their territorial waters from three to two hundred miles, and to begin the process of managing fish stocks on a more regional basis.

The idea of “surplus production” was implicit in the work of Beverton and Holt, as well as Ricker, but it was only Schaefer that used the term, with its anthropomorphic and industrial implications, that the fish were available to be harvested. In many ways, Schaefer’s use of the term harked back to fish culturist Livingstone Stone in 1872, when he wrote of the vast number of fish eggs that had been provided by God, to be held in reserve “until the increased population of the earth should need it and the sagacity of man should utilize it.”¹¹

Several of Schaefer’s underlying assumptions—about the relationships between fishing and fishing, about the resilience of fish stocks, how much of a fish population was surplus to reproductive needs--were essentially untested. Schaefer’s high, dome-shaped growth curves that estimated tuna year classes showed that a substantial portion of the stocks were surplus to reproductive needs and could safely be harvested. Scientists at the time knew that not all fish populations had such high curves; flatter growth curves for some species indicated a much smaller potential harvest.¹² The agenda to the Rome conference, and the background papers

¹¹ Livingstone Stone, “The Artificial Propagation of Salmon in the Columbia River Basin,” *Transactions of the American Fish-Cultural Association* 13 (1884): 21-31.

¹² Michael Graham to Milner Schaefer May 29, 1956, Box MC 2, Unlabeled Folder. Papers of Milner B. Schaefer, Scripps Institution of Oceanography.

solicited from scientists, had all been selected to showcase Schaefer's work at the Inter-America Tropical Tuna Commission, and the success of American fisheries science.

Schaefer's theory that all fish stocks had surplus production was enormously appealing to policy makers who wanted to ensure that fishing would continue without restrictions. Schaefer's models and his logistics curves made the science look extremely precise. Yet his work incorporated a fundamental economic error-- that fishing would slow when catches dropped, so restrictions on developing fisheries were not necessary. But if a free market had ever existed in fisheries, by 1955 it had been substantially eroded by the large amounts of government money that were pouring into the industry, as the developing nations moved to secure their rights to fish throughout the world's oceans.

There was substantial scientific criticism of the adoption of MSY. When Herrington had traveled to London in February of 1955, to begin planning the Rome meeting, Graham had done his best to argue that MSY was not the most appropriate goal for fisheries management.¹³ Herrington responded that MSY was the only objective that was likely to receive general backing, and given the political situation at the time, he was probably right. Graham and FAO fisheries director D.B. Finn tried to point out the negative implications of MSY, but the decisions were made by policy makers, not scientists. When the conference ended, its recommendations were

¹³ Summary Record of an Informal Meeting Held in London on 9th/10th February, 1955, FO 371/115380.

forwarded to the International Law Commission, meeting in Geneva in June of 1955. By 1958, with the start of the Law of the Sea process, MSY was recognized as a policy objective, a scientific theory, and a legal construct.

There was also opposition to MSY from Japanese scientists in 1957, who argued that MSY represented a scientific ideal, and was not suited for day-to-day fisheries management.¹⁴ The Japanese analysis came after MSY was already institutionalized, both in the Tripartite Treaty signed by the U.S., Canada, and Japan in 1951, and by the Rome meeting in 1955. The Japanese critique was an internal document, as scientists from both countries struggled to create a research plan to study salmon migration in the North Pacific, to determine boundaries where each nation could fish. Tomonari Matsushita argued that the Tripartite Treaty seemed to be “constructed very scientifically and rationally, but in reality it is composed of extremely political elements.”¹⁵ The same can be said of MSY.

The idea of a conservative fishing regime, which introduced restricted as the fishery was developing, held little interest to countries that were busy expanding the reach of their fishing fleets. Most developed nations had embarked on extensive expansion of their fleets, often for reasons that involved foreign policy and territorial claims, as much as fish. The Food and Agricultural Organization of the U.N. was working to bring Western fishing technology to third world countries. As fishing

¹⁴ Tomonari Matsushita, “The Japan-United States-Canada Fishery Treaty.” Unlabeled Folder, Papers of Edward Allen, University of Washington Special Collections, 1-19,

¹⁵ Ibid, 16.

pushed deeper into the oceans, new species were discovered and exploited—but the fishing pressure also ratcheted up on fish that had been fished for hundreds of years.

Atlantic cod collapsed not because of individual boats rushing to fish on the Grand Banks of Newfoundland, but because of deliberate government policies that promoted fishing to fulfill other foreign policy objections. It was not the creation of the industrial fishery that destroyed the structure of so many global fish populations; it was the policies that allowed them to fish, virtually unregulated, throughout the world's oceans. When fishing became uneconomic—which happened rapidly, as stocks were discovered and exploited, and as W.F. Thompson, E.S. Russell and Michael Graham had known since at least 1934—governments responded with subsidies, designed to keep the boats fishing.

Fisheries Science and American Hegemony

There is a growing body of literature about American hegemony in science after World War II, but most of it deals with interactions among Americans and European physicists.¹⁶ Other works concentrate on the development of American science and the field of oceanography.¹⁷ This dissertation argues the Americans

¹⁶ Ronald E. Doel, "Scientists as Policymakers, Advisors, and Intelligence Agents: Linking Contemporary Diplomatic History with the History of Contemporary Science," in *The Historiography of Contemporary Science and Technology*, ed. Thomas Soderqvist (Amsterdam: Harwood Academic Publishers, 1997)., John Krige, *American Hegemony and the Postwar Reconstruction of Science in Europe* (Cambridge: MIT Press, 2006)., Stuart W. Leslie, *The Cold War and American Science* (New York: Columbia University Press, 1993)..

¹⁷ Naomi and Ronald Rainger Oreskes, "Science and Security before the Atomic Bomb: The Loyalty Case of Harold U. Sverdrup," *Studies in the History and Philosophy of Modern Physics* 31, no. 3

fundamentally shaped international fisheries science and the management process during this period. Legal scholar Ann Hollick argued in 1982 that the U.S. was not successful in translating its post-war power into dominance in fishing. She contended that fisheries were not a priority for the government and its full power was never brought to bear, partly because of the fragmentation of American fisheries interests.¹⁸ Legal scholar Harry Scheiber has written of the inability of the U.S. to have its Abstention Principle, where countries agreed to waive their rights to fish, adopted as part of international law.¹⁹ The Principle of Abstention was only used in the North Pacific, among Japan, Canada, and the U.S. It was imposed on Japan as a scientific doctrine, despite Japanese objections, and criticism of its lack of a scientific underpinnings. And while Herrington advocated Abstention as conservation, it was expressly concerned with allocation, the sharing of salmon among the U.S., Canada, and Japan.

During the 1950s, the U.S. substantially increased the amount of seafood it bought from other countries, a development that has been seen as an admission that American fisheries were not successful. Certainly the dire condition of the New England fisheries and the loss of tuna processing jobs in Southern California fuel the idea that Americans were not successful in setting fisheries policy.

(2000)., Jacob Darwin Hamblin, *Oceanographers and the Cold War: Disciples of Marine Science* (Seattle: University of Washington Press, 2005).

¹⁸ Ann L. Hollick, *U.S. Foreign Policy and the Law of the Sea* (Princeton: Princeton University Press, 1981). ,62.

¹⁹ Harry N. Scheiber, "Origins of the Abstention Doctrine in Ocean Law: Japanese-U.S. Relations and the Pacific Fisheries, 1937-1958. *Ecological Law Quarterly* 16 (1989), 23-101.

I argue the opposite: the U.S. was very successful in influencing the structure of fisheries science and the framework for fisheries management, because of the State Department and its impact on the adoption of policy. MSY is the basis for most international fisheries agreements negotiated during this time. The U.S. was opposed to an international fisheries agency with binding authority, preferring to promote the development of regional, bilateral, and multilateral fishery agreements, generally with little enforcement or regulatory power. These commissions have had limited ability in controlling the dynamics of industrial fishing, especially when it was fueled by government money, and, in the case of the U.S., an ideological opposition to limiting the number of fishing licenses.

This framework for fisheries management has also resulted in large portions of the ocean and many fish species that are not protected by any sort of regulation to limit harvest. This has been especially harmful for deep-sea fishes that are slow growing, because good survival conditions do not occur every year, but perhaps only once in a decade. For such fish populations, there is very little fish that is surplus to reproductive needs, let alone to sustain a harvest year after year. These fish live in deep-sea canyons, where ever-evolving technology has allowed fishing nets to operate, leaving few places in the sea where fish can not be successfully pursued and harvested. This expansion has occurred despite “significant gaps in knowledge or understanding of deep-sea fish and their resilience to exploitation.”²⁰

²⁰ Kristina M. Gjerde and David Freestone, “Unfinished Business: Deep-Sea Fisheries and the Conservation of Marine Biodiversity Beyond National Jurisdiction, Editors Introduction.” *The International Journal of Marine and Coastal Law*. 19 (3) 2004. 209-222. 212.

Fisheries Science in the Pacific

Most of the historical analysis of the development of fisheries has been focused in the Atlantic Ocean, and especially in the North Sea, when countries have been fishing for hundreds of years. Fisheries developed much later in the Pacific, but their industrialization was much more rapid. Fisheries in both Japan and in North America were operated on an industrial scale as early as the 1880s. By the 1920s, the commercial fleets of both Japan and the U.S. were increasing their reach into the Pacific. With the development and systematic application of refrigeration technology, the fleets of both countries steadily expanded their range. In 1936, the fleets began to touch.

I have contended that the critical event in the development of modern fisheries was the 1936 decision by Japan for a scientific investigation into the sockeye salmon stocks of Bristol Bay. In formulating the U.S. response, Secretary of State Cordell Hull argued the U.S. was foregoing harvest to conserve the Bristol Bay runs, and that additional fishing pressure could destroy the resource. Hull was correct, but his construction of U.S. political self-interest derived its power from the supposed scientific foundation. It also ignored the fact that the American themselves were overfishing the sockeye runs, as biologists had been pointing out for two decades.

It is a short step from Hull's 1936 political construction to the High Seas Policy of 1949, a policy that justified the continued expansion of American fisheries and that Wilbert M. Chapman repeatedly insisted was grounded in the science of

conservation. But as we have seen, Chapman meant conservation in the Progressive sense of *utilization*, with the idea that not to harvest the available fish was wasteful.

This policy of utilization was also used by Americans during the Occupation of Japan. The Supreme Commander Allied Powers was rightfully concerned about expanding the Japanese fisheries to feed a starving nation. But expanded Japanese fishing also fulfilled political and economic objectives, of providing a U.S. market for Japanese goods. Especially after the start of the Korean War in 1951, and as the Cold War deepened, the U.S. supported the expansion of Japanese fishing, despite the domestic consequences in Southern California. Other State Department policies during this period resulted in damage to the New England fisheries, the price of foreign policy concerns involving Iceland, Norway, and Canada. Fishery policy has always been about more than just fish.

This political dimension has substantially shaped American fisheries science. The Americans have been so insistent that their fisheries management was grounded in science that the statement has widely been accepted as actually being true. This masks the fact that the U.S. did not begin systematic investigations into the biological basis for salmon management until the stocks had collapsed so completely that the canning industry in 1945 paid W.F. Thompson to investigate what kind of conservation was necessary to recover the runs.

In his account of the collapse of California sardines, Arthur F. McEvoy in *The Fisherman's Problem*, offered evidence that scientific advice to restrict fishing was

ignored by policy makers, who were reluctant to restrict the politically-powerful fishing industry.²¹ California never did really regulate the sardine fishery; the state just studied it, a pattern that has been repeated with subsequent fisheries in other places. It would take until 1967 for the California legislature to formally close the directed fishery for sardines, some sixteen years after the fishery collapsed in Monterey Bay.²² The rhetoric of American fisheries management has always been that actions have been based in conservation—but it is conservation as T. S. Huxley and Wilbert Chapman defined it, utilization of the stocks.

MSY continues to exist in three realms, as policy, as science, and as a legal construct. But it derives its power in both the policy and legal fields from its supposed scientific underpinning. Yet from the start MSY was a theoretical construct, with limited experimental or observational backing, as is acknowledged by the wry definition attributed to the late British biologist John Gulland: "A quantity that has been shown by biologists not to exist, and by economists to be misleading if it did exist. The key to modern fisheries management."²³

Fisheries Science and West Coast Rockfish

In his last scientific paper, published after his death in 1995, Raymond Beverton wrote of the "gruesome story" of fishery yield modeling, of the failure to protect stocks, to arrest overcapacity, and the inadequacy of methods to deal with

²¹ Arthur F. McEvoy, *The Fisherman's Problem: Ecology and Law in the California Fisheries*, (Cambridge: Cambridge University Press, 1986).

²² Richard H. Parrish. "A Monterey Sardine Story." *The J.B. Phillips Historical Fisheries Report*, Museum of Monterey, Vol. 1., No. 1, Spring 2000, 1-6.

²³ Daniel Pauly, *On the Sex of Fish and the General of Scientists*, (London: Chapman & Hall, 1997).

multi-species fisheries.²⁴ One of those failures has been the collapse of West Coast groundfish in 1996, the event that triggered my interest in the history of fisheries science.

This historical study suggests that the roots of the collapse of West Coast groundfish lay in the decisions that were made at the Rome conference in 1955. The idea that fish stocks had surplus production that could safely be harvested was deeply embedded in the consciousness of American fishery scientists. It was part of the conceptual foundation, the lens through which scientists interpreted observations and formed conclusions.²⁵ When scientists in 1979 began work on the first Groundfish Management Plan, they decided that up to 65 percent of the fish could be harvested without impairing the health of the stocks. The harvest rate was considered to be conservative.

Just as Milner B. Schaefer in 1955 had proposed a high harvest level for yellowfin and skipjack tuna without knowing the age structure of tuna, scientists in 1979 did not know the age structure of many West coast rockfish. As scientists were debating the shape of fishery management, Richard Beamish published a paper that estimated that Pacific Ocean Perch (*Sebastes alutus*) were more than double the oldest recorded age of fish. Beamish based his work on a new aging technique that involved burning off the surface of otoliths (akin to ear bones), revealing additional

²⁴ Raymond Beverton, "Fish, fact and fantasy: a long view," The Larkin Lecture, Reviews in Fish Biology and Fisheries, 8, 1998, 229-249

²⁵ James A. Lichatowich, Willis E. Mc Connaha, William J. Liss, Jack A. Stanford, and Richard N. Williams, "The Existing Conceptual Foundation and the Columbia River Basin Fish and Wildlife Program," *Return to the River: Restoration of Salmonid fishes in the Columbia River Ecosystem* (Portland: Northwest Power Planning Council, 1996), 29-49.

age rings The single most important species in the groundfish fishery off the West Coast of Canada were not thirty years old, but perhaps more than sixty years old.²⁶ More recent investigation show the fish live to be at least 100 years old.²⁷

During the next two decades, scientists would systematically work to discover more about *Sebastes*, a population of at least 65 species of rockfish that live off the Pacific coast from Alaska to Baja, California.²⁸ By 1986, one scientist suggested that the maximum surplus for rockfish such as Pacific Ocean Perch was between one and five percent of the unexploited biomass.²⁹ Yet such data were not incorporated into the revisions of the Groundfish Management Plan. In 1996, new biological assessments showed that at least six species had been reduced to less than ten percent of virgin biomass, triggering the provisions of the Sustained Fisheries Act, which had just been passed by Congress. The fishing restrictions rippled throughout the entire West Coast fishing industry. A subject for further study is why this growing body data on the aging of rockfish was not incorporated into iterations of the West Coast Groundfish Management Plan.

²⁶ Richard J. Beamish, "New information on the Longevity of Pacific Ocean Perch (*Sebastes alutus*) *Journal of the Fisheries Restoration Board of Canada* 36 (1979), 1395-1400, 1399.

²⁷ Milton S. Love, Mary Yoklavich, and Lyman Thorsteinson, *The Rockfishes of the Northeast Pacific*, (Berkeley: University of California Press, 2002), 123.

²⁸ *Ibid.*, 19.

²⁹ Robert C. Francis, "Two Fisheries Biology Problems in West Coast Groundfish Management," *North American Journal of Fisheries Management* 6 (4) 1986, 453-462, 457.

The Tragedy of Enclosure

One of the most pernicious aspects of the Tragedy of the Commons, as envisioned by Garrett Hardin, has been the absolving of individual responsibility, replacing it with collective action—or inaction, as governments have been loathe to restrict the actions of individuals acting in their own self-interest. This has been especially true when it comes to American fisheries. Fishermen in Japan had accepted for centuries that fishing had to be regulated for the collective good of the community. Britain began advocating restricting the number of fishermen in the 1930s, and led the way in championing policies that restricted fishing gear, seasons, and closed areas. It was not until the 1976 passage of the Fisheries Conservation and Management Act, which extended federal jurisdiction to 200 miles, that the U.S. and state governments began to limit the number of boats in the fisheries. It was not until the passage of the Sustainable Fisheries Act in 1996 that MSY was modified and management councils told that harvests levels could not be set above MSY levels. In the meantime, fishing has continued. The overharvest of fish stocks had created what Canadian biologist Daniel Pauly calls an intellectual crisis for fisheries scientists.³⁰

In the decades since the Rome conference, biologists have done much to continue to experiment and to refine the mathematical models introduced by Beverton, Holt, Ricker, and Schaefer. Beverton and Holt ended their 1957 monograph with these hopeful words:

³⁰ Daniel Pauly, "Fisheries Management: Putting Our Future in Places," in *Fishing Places, Fishing People: Traditions and Issue in Canadian Small-Scale Fisheries*, ed. Dianne Newell, and Rosemary E. Ommer (Toronto: University of Toronto Press, 1999).355.

Yet it is the changes produced in the fisheries by the regulations themselves...that provide the opportunity of obtaining, by research, just the information that may have been lacking previously. Thus the approach towards optimum fishing, and the increase in knowledge of where the optimum lies, can be two simultaneous and complementary advances; the benefits to the fisheries of such progress can hardly be exaggerated.³¹

But in a sense, the fisheries science was frozen in 1955, with the objective of fisheries management to take the “maximum” harvest. There have been various modifications of MSY, replacing the word maximum with others, such as optimum, or economic, but the modifications have not been substantial enough to have prevented fish populations from being overly exploited. Michael Graham’s objective of “rational fishing” certainly has not been achieved.

It is time to rethink Maximum Sustained Yield, the basic policy under which fisheries have been managed, and to replace it with a framework that acknowledges limits. Fundamentally, MSY did not acknowledge limits—not really. It claimed it did, at least in theory, but in practice it worked, as historian William Robbins has suggested of post-war American science, not establish limits, but to exceed them.³²

Maximum Sustained Yield reflected Chapman’s view—one that was congenial to U.S. aspirations--that fishing was good for fish populations. We now know that this is not true. We also know that the oceans are complex physical, chemical, and biological systems that are dynamic and unpredictable across time

³¹ Raymond J. H. Beverton and Sidney J. Holt, *On the Dynamics of Exploited Fish Populations* (Caldwell, N.J.: The Blackburn Press, reprint of 1st edition, 1957, 1993), 436.

³² William Robbins, *Landscapes of Promise: The Oregon Story, 1800-1940*. (Seattle: University of Washington Press, 1997).

and space. But more important, we can see, in hindsight, that the United States was never willing to accept serious limitations on its capacity to fish anywhere on the globe. The U.S believed in open seas and open skies. And it developed and promoted a version of fisheries science that supported this position.

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