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A Historical Analysis of the Collapse of Pacific Groundfish: U.S. Fisheries Science, Development, and Management, 1945-1995

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A Historical Analysis of the Collapse of Pacific Groundfish: U.S. Fisheries Science, Development, and Management, 1945-1995

The objective of this study had been to understand the historical development of U.S. fisheries science. We hoped to gain a better understanding of why fisheries management has failed to achieve the goal of sustainable fisheries that would protect fish stocks, as well as the livelihoods of fishermen and the coastal communities in which they live. This has been a historical project, based on archival research in the history of fisheries management, science, and policy.

We began our study around the adoption of Maximum Sustained Yield as the goal of American fisheries management in 1949. In 1955, MSY was adopted as the goal of international fisheries management at a conference sponsored by the Food and Agricultural Organization of the United Nations. Our archival work began in the summer of 2004, with a visit to the FAO archives in Rome, to seek information about the conference. Other archival work was done at the National Archives and Records Administration at College Park, MA, where the U.S. State Department and U.S. Fish and Wildlife files are located. I also did research at the Truman Presidential Library and at the Eisenhower Presidential Library, as well as at the University of Washington Special Collections, and at the Scripps Institution of Oceanography. The visit to the Truman Library was funded by a grant from the library.

We quickly realized that science had little direct influence on the development of American fisheries policy. Instead, political considerations played the decisive role in policy development. It has been argued that when it came to American fisheries, the U.S. was not able to translate its political and economic power into a dominant place within the world fishing powers.<sup>1</sup> However, this is a narrow view, based solely on catch, and the U.S. share of global fish catches declined through the 1950s.

We disagree with this analysis. We argue that the U. S. decisively shaped both the fisheries science adopted as law during this period, and the fisheries management process itself that is in place today. Maximum Sustained Yield retains its place as the cornerstone of fisheries management, despite substantial biological criticism and its efficacy in protecting fish populations from overharvest. The Americans were successful in derailing

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<sup>1</sup> Ann L. Hollick, *U.S. Foreign Policy and the Law of the Sea* (Princeton: Princeton University Press, 1981).

the formation of an international fisheries agency to regulate fishing, in favor of the creation of limited, bilateral or multilateral commissions, with limited regulatory authority. Scientific fisheries science was a State Department tool during the Cold War, used to influence the development of fisheries science and management not only in Europe and Latin America, but in Japan as well.

While most of our analysis has been historical, we do make one policy finding, that it is time to rethink the basic policy under which fisheries have been managed, Maximum Sustained Yield, and to replace it with a policy that more accurately reflects our scientific knowledge of the ocean. MSY reflected the scientific understanding of the 1950s, fishing was good for fish populations, by culling out the older individuals and making way for younger fish that grew more rapidly to a marketable size.<sup>2</sup> MSY will not serve as well as we try to manage the oceans for the next 100 years. We need a policy that is reframed to rebuild fish stocks and to sustain the genetic diversity that remains during a period of lower ocean productivity. The fundamental shift in ecological thinking centers on the change in perception of ecosystems as being places of equilibrium, to being complex systems that are dynamic and unpredictable across time and space. Current policies and plans do not reflect emerging scientific perspectives.<sup>3</sup>

## Historical Narrative

We have found that the triggering event for the development of American fisheries science and the fisheries management process was to be found in a proposal from Japan, in 1936, that it would mount a scientific investigation of the world's richest fishery, the sockeye salmon in Bristol Bay. There was enormous resistance from American fishermen and policy makers, and Cordell Hull, the Secretary of State, formed a political response which was that American fishermen had foregone harvest in Bristol Bay, in order to conserve the runs, and that this forbearance would be for naught if Japanese fishermen were included in the harvest. This essentially political formulation was translated into a scientific claim that U.S. fisheries were managed for conservation, despite considerable evidence that Alaskan salmon runs in general, and Bristol Bay runs in particular, were being overharvested.<sup>4</sup>

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<sup>2</sup> Erik M. Poulsen, "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. United Nations Publications, 1956. 183-103. 184.

<sup>3</sup> Tabatha J. Wallington, Richard J. Hobbs, and Susan A. Moore. "Implications of Current Ecological Thinking for Biodiversity Conservation: A Review of the Salient Issues." *Ecology and Science*. 10 (1):15 (online, URL:

<http://www.ecologyandsociety.org/vol10/iss1/art5/>

<sup>4</sup> Charles H. Gilbert and Henry O'Malley, "Special Investigations of Salmon Fishery in Central and Western Alaska," (Alaska Fisheries and Fur Industries, 1919)., Richard A. Cooley, *Politics and Conservation: The Decline of the Alaska Salmon* (New York: The Conservation Foundation, 1963).

The State Department requested the Japanese government withdraw the salmon proposal, and it did so. Fishing tensions subsided until after the war, when the Alaskan salmon interests pushed for stronger measures to keep the Japanese out of Bristol Bay. The Truman Proclamation of 1945 declared the U.S. had the right to create conservation zones in the ocean to protect fish stocks from overfishing. The U.S. did not create any conservation zones, but the proclamation was used by Latin American nations to extend their own jurisdictions, in an effort to control fishing off their coasts by American tuna boats.

It was in response to these growing tensions—the threat from Japan, and territorial claims from Latin America—that prompted Wilbert McLeod Chapman, the first fisheries attaché at the State Department, to adopt the U.S. High Seas Fisheries Policy in 1949. The scientific basis of the policy was Maximum Sustained Yield, which Chapman defined as making possible “the maximum production of food from the sea on a sustained basis year after year.”<sup>5</sup>

The high seas policy rests on a scientific formulation, but the document does not cite any scientific papers or references to support the theory. The idea of harvesting the maximum amount was the logical policy choice for scientists during the Progressive era. 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 1949, when Chapman adopted the policy.

The high seas policy was also in accord with a fundamental foreign policy objective during this period, the freedom of the seas. In the face of an increasing number of territorial claims from Latin American countries, the U.S. argued it was not necessary to expand territorial limits to conserve fish stocks. When the International Law Commission issued draft regulations to govern high seas fishing in 1953, 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 from the current three.

At the 10<sup>th</sup> Inter-American Conference at Caracas in 1954, Venezuela offered a motion to establish a 200-mile limit for the territorial sea in Latin America. The Americans managed to keep the proposal from a vote. But the meeting decided to ask the Organization of American States to hold an International Conference on the Living Resources of the Sea in 1955 (Hollick, 1978, 88).

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<sup>5</sup> Wilbert M. Chapman. “United States Policy on High Seas Fisheries.” Department of State Bulletin, Vol. XX, No. 498, Jan. 16, 1949, 67-80.

The Americans were alarmed and sought to take control of the conference, first by moving it into the jurisdiction of the United Nations, by changing its location to Europe to dilute the Latin American presence, and by taking control of the agenda. Fisheries were seen as being in the front line of a foreign policy that called for open skies and open seas, for American planes, naval ships, maritime transport, and fishing boats. Unilateral action to establish expanded territorial limits in the sea was seen as jeopardizing the American high seas tuna fishery, and providing encouragement for other countries to restrict American actions. Of particular concern was the Soviet Union's decision to claim a twelve-mile territorial sea, which the U.S. refused to recognize.

At the 1955 meeting in Rome, delegates decided that fisheries were to be managed for the objective of MSY, and that "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."<sup>6</sup> The conference had decided that the aim of fisheries management should be to harvest fish until a critical maximum point was reached, when conservation measures could be applied. MSY thus expresses an underlying belief that fish stocks are robust and resilient, and that not to harvest is wasteful. Fishing was viewed as a benign force in ecosystems, removing older fish that compete with younger cohorts for space and food.

This dissertation looks at the development of fishing as a large-scale global system, subject to other international forces (such as the price of oil) and local disruptions (failure of a year-class of fish). Government money fueled an arms race in the ocean in terms of the catching of fish. But the increased globalization of the fishing industry also created a complex set of economic and trade inter-actions. The domestic American fishing industry was one of the first to feel the impacts of post-war trade policies, which allowed fishing jobs to be lost because of trade decisions with other countries. The three largest American fisheries were all shaped by these trade decisions.

There were three fundamental errors made by the Rome conference. The first is biological, that all fish populations have a harvestable surplus, which can safely be taken as the fishery is studied. The second was that when fisheries declined and became uneconomic, that fishing would stop. The third error was how long it would take to finally understand enough of the secrets of the sea for us to abandon the idea of managing according to what the sea could provide, not according to what we wanted.

The biological error is Maximum Sustained Yield, or MSY. I contend that MSY is first and foremost a policy construction. It was transformed into science by the actions of a group of policy makers at the Rome conference. When the conference ended, its recommendations were forwarded to the International Law Commission, meeting in

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<sup>6</sup> FAO, RG 61.5, May 19, 1955.

Geneva in June of 1956. Over the next few years, MSY would be adopted as a legal construction as well. MSY, which is a theoretical construction, continues to exist in three realms, as policy, a science, and as a legal construction. But it derives its power in both the policy and legal fields from its supposed scientific underpinning, which we argue that greatly shaped by policy considerations.

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