

a local commercial fishery. By the turn of the century Japanese immigrants to Hawaii dominated the bottomfish fishery using wooden-hulled sampans propelled by sails or oars. The bottomfish fishing gear and techniques employed by the Japanese immigrants imitated, with slight modifications, those traditionally used by Native Hawaiians. During the early years of the commercial bottomfish fishery, vessels fished at grounds around the MHI. The fishing range of the sampan fleet increased substantially after the introduction of motor powered vessels in 1905. Fishing activity was occurring around the NWHI as early as 1913. Within a few years more than a dozen sampans were fishing for bottomfish around the NWHI. During World War II the bottomfish fishery in Hawaii virtually ceased operations but recommenced shortly after the war ended. The late 1940s saw as many as nine vessels fishing around the NWHI, but by the mid-1950s vessel losses and lower fish prices reduced the number of fishery participants. During the 1960s only one or two vessels were operating around the NWHI. There was renewed interest in bottomfish fishing in the NWHI in the late 1970s following a collaborative study of the marine resources of the region by state and federal agencies. By 1987, a total of 28 vessels actively fished for NWHI bottomfish, with a dozen fishing full time.

Bottomfish are caught both by commercial and recreational fishermen around the MHI and by commercial fishermen in the NWHI. The size of the recreational catch around the MHI is unknown and is confounded not only by non-reporting but also by the blurring of the distinction between commercial and recreational fishermen.

The Bottomfish and Seamount Groundfish FMP was implemented in 1983. It prohibits destructive fishing techniques, including explosives, poisons, trawl nets and bottom-set gillnets; establishes a moratorium on the commercial harvest of seamount groundfish stocks at Hancock Seamount; and implements a permit system for fishing for bottomfish around the NWHI.

A limited entry scheme is in effect for bottomfishing in the NWHI whereas bottomfish stocks in the MHI are open to all fishermen. In the MHI approximately 80% of the bottomfish habitat lies in state waters. The State of Hawaii has implemented a series of area closures around the MHI and recreational bag limits to address the problem of local depletion of bottomfish. In 1989 the Council developed regulations that divided the NWHI into two fishing grounds: the Mau and Hoomalu Zones (Figure 3). Access to the Mau Zone is limited to 10 permit holders, two of which are reserved for indigenous communities through a Community Development Program. Available permits are issued to fishermen based on past participation in the MHI and/or NWHI bottomfish fisheries. Access to the more distant and lightly exploited Hoomalu Zone is limited to seven vessels. Entry to the Hoomalu Zone is through accumulation of points through fishing in the MHI or Mau Zone. Fishermen who have permits to fish in the Hoomalu zone are then restricted to fishing in this zone and must meet minimum landing requirements to remain in the fishery. The limited access programs for the Hoomalu and Mau Zones were established in 1988 and 1999 respectively.

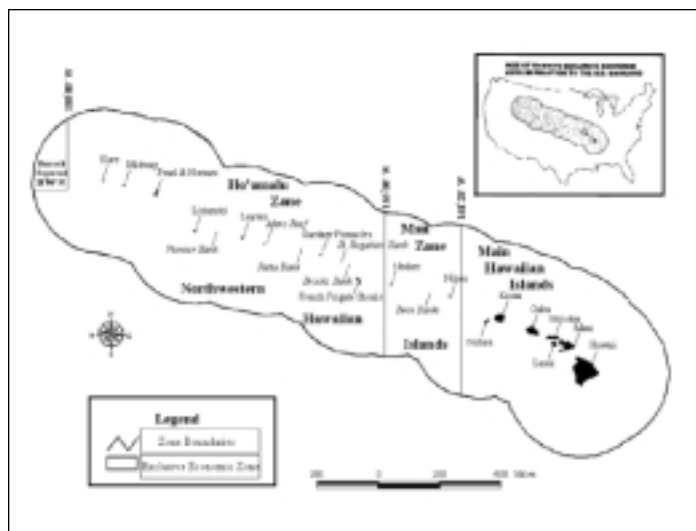


Figure 3. The Mau, Ho'omalulu, and Main Hawaiian Islands management zones for Hawaii bottomfish fishing.

The NWHI Coral Reef Ecosystem Reserve was established by Executive Orders in 2000 and 2001. The process to establish a proposed NWHI Sanctuary is underway and will consider a range of reasonable management alternatives related to the bottomfish fishery.

In addition to the deep-slope fisheries in the MHI and NWHI, a trawl and bottom longline fishery targeting alfonsin at the southeast Hancock Seamount in the NWHI and in the Emperor Seamount Chain was started by Russian and Japanese fishing vessels in the late 1960s. After 10 years of large catches, overfishing caused the fishery to collapse. A moratorium on the harvest of alfonsin on the Hancock Seamounts has been in effect since 1986 in an effort to rebuild the stock. The moratorium is in effect until 2004 and may be extended. Periodic reviews of the stock indicate that no recovery has occurred.

A Guam bottomfish closure was recently recommended by the Council and is being reviewed. Vessels over 50 feet will be prohibited from targeting bottomfish within 50 miles around Guam. The closure will help control fishing effort at offshore seamounts and allow the traditional small vessel fishery to continue to use resources. The measure also requires federal permits and reporting for larger vessels.

The Council is now considering management options for bottomfish resources in the Northern Mariana Islands.

4.5. PRECIOUS CORAL FISHERIES

The Western Pacific Council's Precious Corals FMP was approved in 1980 and regulations for the fishery were promulgated in 1983. The plan established a permit requirement, harvest quotas for separate beds, a minimum size limit for pink coral, gear

restrictions, area restrictions and fishing seasons. In 1991 an amendment to the FMP defined a bed as overfished with respect to recruitment when the total spawning biomass (all species combined) has been reduced to 20 percent of its unfished condition. Figure 4 shows the location of Hawaii’s precious coral beds.

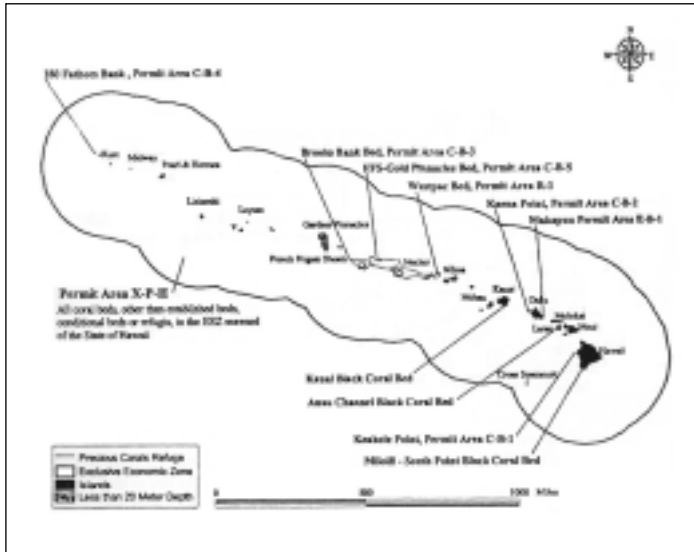


Figure 4. Precious coral beds in Hawaii.

In 1965 Japanese coral fishermen discovered a large pink coral bed (*Corallium* spp.) near the northwestern end of the Hawaiian Archipelago. Intermittently over the next two decades, dozens of foreign vessels employed tangle-net dredges to extract precious corals in waters around the NWHI. During the 1980s, Japanese and Taiwanese coral vessels frequently fished illegally in the US EEZ around the NWHI. Poaching stopped in these areas in the late 1980s because the remaining precious corals could not sustain an economically viable fishery.

The Hawaii precious coral fishery includes two distinct sectors. One sector extracts deep-water (400–1,500m) pink, gold and bamboo corals. This fishery historically employed dredges and tangle nets to extract the precious coral, but the Council now requires selective methods such as remotely operated vehicles and submersibles. In 1966 researchers located a small pink coral bed off Makapuu, Oahu, in the MHI. Over the next three years, a small group of fishermen harvested this bed using tangle net dredges. By 1969 Hawaii’s precious corals industry was producing about \$2 million in retail sales, partly from the sales of pink coral jewelry imported from Taiwan and Japan. Starting in 1973, Maui Divers of Hawaii, Inc., adopted the use of a manned submersible to commercially extract pink, gold and bamboo coral at the Makapuu bed. These operations were discontinued in 1978 due to high operating costs. In 1988 the domestic fishing vessel *Kilauea* received a federal experimental fishing permit to collect precious corals at Hancock Seamount in excess of extraction quotas established

by the Council in 1980, but the operation was soon discontinued. American Deepwater Engineering received a federal permit to collect precious corals in waters around Hawaii, using two one-person submersibles. In 2000, American Deepwater Engineering collected precious corals at the Makapuu bed and in the Exploratory Area of the EEZ around the MHI. New precious coral beds continue to be discovered in the Hawaiian Islands archipelago, with new beds identified in both the MHI and NWHI during 2002 and 2003.

The second sector of the Hawaii precious coral fishery, which occurs predominantly in state waters, involves hand-collecting black coral using SCUBA divers at depths of 30–100m. Black coral has been collected for centuries as a charm and a medicine. Native Hawaiians used black coral medicinally to treat various respiratory and childhood diseases and may have collected the coral with hook-and-line. The commercial extraction of black coral began in the late 1950s when sport divers discovered beds of *Antipathes dicomata* and *A. gradis* nearshore off Maui. A cottage industry producing curios and black coral jewelry developed. Since the inception of the black coral fishery in Hawaii in the late 1950s fewer than 10 individuals have been active in the fishery at any one time. Harvest levels of black coral in Hawaii have fluctuated widely over the past four decades reflecting changes in demand. Table 8 lists the volume and value of black coral landings in Hawaii. During the 1970s the State of Hawaii drafted a regulation requiring a minimum height of 48 inches, the estimated minimum size for maintaining maximum sustainable yield. In the 1990s the state promulgated regulations to implement the size restriction. Between 1990 and 1997 the annual harvest of black coral in Hawaii ranged between 846 – 6,017 lb, with an annual average of 3,084lb.

Table 8

Volume and value of black coral landings in Hawaii.

Year	Extracted (lb)	Sold (lb)	Value (\$)
1990	2,349	2,169	31,575
1991	2,305	2,250	35,080
1992	2,398	2,328	46,560
1993	864	769	15,380
1994	4,354	4,209	84,180
1995	6,017	5,912	122,765
1996	4,865	1,703	41,325
1997	1,520	415	10,394

The recently established NWHI Coral Reef Ecosystem Reserve prohibits precious coral fishing within the Reserve boundary. The process to establish a proposed NWHI Coral Reef Ecosystem Sanctuary is underway and will consider a range of reasonable management alternatives related to precious coral fishing.

For all species of deep-water precious corals, particularly gold coral, the basic biology is poorly understood and their distribution

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within the EEZ is also poorly understood. Furthermore, there is controversy over the unknown degree of adverse effect a NWHI precious coral fishery would have on populations of endangered Hawaiian monk seal. Monk seals have been observed preying on eels found among precious coral colonies. The importance of eels found among precious coral colonies in the monk seal diet is poorly understood

4.6. INDIGENOUS PROGRAMS

Indigenous cultures in the Western Pacific developed in isolation over long periods of time. The earliest evidence of settlement in Samoa dates to 3,600 years ago, in Guam and the Mariana Islands to 3,100 years ago, and in Hawaii 1,700 years ago. These earliest travelers brought a suite of traditions and beliefs that supported an island lifestyle—an oceanic culture dependent on the oceanic environment to meet their nutritional and other needs. Wise natural resource management ensured survival of the culture. These values continue to be nurtured and encouraged by the Council through its indigenous program, which seeks to address the right of the aboriginal people of the US Western Pacific to demonstrate and exercise their traditional and customary practices.

The 1996 re-authorization of the Magnuson-Stevens Act confirms these unique characteristics by stating, *“Pacific Island Areas contain*

unique historical, cultural, legal, political, and geographical circumstances which make fisheries resources important in sustaining their economic growth.” New provisions contained within the Act allow for establishment of Western Pacific Community Demonstration Projects, Community Development Programs and Pacific Islands Area (foreign) Fishery Agreements (PIAFA).

The goals of the Demonstration and Development Programs are to provide greater access for native communities to their fishery resources. In addition to providing greater access, capacity is now being developed in native communities to use federal programs effectively and efficiently to advance their customary, traditional and cultural practices. Grant writing, project planning and monitoring, and community organizing and mobilization are skills now being fostered.

The Magnuson-Stevens Act recognizes that the US territories and commonwealth in the Western Pacific Region have little in the way of economic opportunities, compared to the mainland. Consequently, the Act permits territorial and commonwealth governments to request that the Department of State enter into negotiations with DWFNs wishing to fish in EEZ waters around American Samoa, Guam and the Northern Mariana Islands to develop PIAFAs. A unique feature of the PIAFA arrangement is that all the revenues from the fishing agreement, including fines and penalties, accrue to the territorial government.

5. PRIORITIES FOR THE FUTURE

5.1. INTERNATIONAL MANAGEMENT

The Western Pacific Council’s role in the multilateral management of the highly migratory pelagic stocks in the EEZ and adjacent high seas of the Western Pacific Region has been significant and is likely to increase in the future.

The Western Pacific Council assisted in hosting four of the Multilateral High-Level Conferences (MHLCs) in Honolulu, which led towards the establishment of the Convention on the Conservation and Management of Highly Migratory Fish Stocks in the Central and Western Pacific Region (Western and Central Pacific Fisheries Convention). Developed to be consistent with the 1982 United Nations Convention on the Law of the Sea and follow the framework of the United Nations Implementing Agreement, this Convention was adopted on September 4, 2000, to establish a regional mechanism for the conservation and management of highly migratory fish stocks in the central and western Pacific Ocean. The Convention provides for the establishment of an international fishery commission to implement the provisions of the Convention. The Council participates in Preparatory Conference meetings, convened to lay the groundwork to establish the Commission. Specifically the Preparatory Conference is to establish the organizational and financial framework for the new Commission and its subsidiary

bodies, as well as facilitate the future work of the Commission. It is to begin the process of collecting and analyzing data on the status of the fish stocks and, if necessary, recommend conservation and management measures. The Preparatory Conference will continue until the Convention enters into force in late 2004. The Convention applies to all species of highly migratory fish stocks within the Convention Area (defined as all fish stocks of the species listed in Annex I of the 1982 Convention occurring in the Convention Area and such other species of fish as the Commission may determine). Conservation and management measures under the Convention are to be applied throughout the range of the stocks or to specific areas within the Convention Area, as determined by the Commission. The

Apart from Hawaii, Guam, the Northern Mariana Islands and American Samoa there are a further 18 nations and territories in the western Pacific, each with an EEZ and with different political affiliations.

The 14 independent Pacific Island nations are members of the South Pacific Forum, which also includes Australia and New Zealand. The secretariat for the Forum is based in Fiji, with its fisheries administration, the Forum Fisheries Agency (FFA) in the Solomon Islands. The FFA was established to negotiate access agreements by foreign fleets for the Forum member countries, to