

**Western
Pacific
Regional
Fishery
Management
Council**

October 31, 2001

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Dear Bill and Rod:

I am pleased to enclose with this letter the Western Pacific Fishery Management Council's Final Coral Reef Ecosystem Fishery Management Plan (CREFMP). This is the first new FMP developed for our region since 1986, when the bottomfish FMP was implemented. Further, it is a landmark document, being the nation's first ecosystem-based FMP and is the culmination of over five years of diligent work by many colleagues within the Council and NMFS families. A key feature of the development of this FMP has been the extensive and in-depth reviews it has received, both from other government agencies and the public at large, and which have shaped the contents of the final document.

The FMP includes specific objectives to promote sustainable fisheries while providing for substantial protection of coral reef ecosystem resources and habitats throughout the Council's jurisdiction. The FMP will implement a number of management measures including the establishment of a network of marine protected areas throughout the region's coral reef habitats. Under the plan, 12% of US coral reef habitat in federal waters of the western Pacific has been designated no-take areas. The plan also establishes permit and reporting requirements for monitoring the harvest of coral reef resources, and contains a variety of measures to minimize impacts on coral reef habitat. These include prohibiting the use of destructive and non-selective fishing gears, prohibiting the harvest of coral and live rock (with few exceptions), and requiring vessel insurance to cover the cost of clean-up and wreckage removal in the event of a grounding. Most importantly, the plan incorporates an adaptive management approach using a framework process for rapid regulatory modifications in the event of major changes within coral reef ecosystems or coral reef fisheries.

The Council requests that the National Marine Fisheries Service commence a timely review of this FMP for structural completeness, and consistency with national standards and other applicable laws. The Council also requests the National Marine Fisheries Service to begin the process of rule-making to implement the regulations stemming from the FMP, in order to afford protection to the coral reefs and associated marine resources in the Western Pacific Region. Mahalo!

Sincerely,

A handwritten signature in black ink, appearing to read "Kitty", with a large, stylized loop at the beginning.

Kitty M. Simonds
Executive Director

cc: Judson Feder-NOAA/GC
Council Members
Western Pacific Congressional Delegation

FINAL
FISHERY MANAGEMENT PLAN
FOR
CORAL REEF ECOSYSTEMS OF
THE WESTERN PACIFIC REGION

Volume I

Including:

Amendment 7	Bottomfish and Seamount Groundfish Fisheries
Amendment 11	Crustaceans Fisheries
Amendment 5	Precious Corals Fisheries
Amendment 10	Pelagics Fisheries

Western Pacific Regional Fishery Management Council

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PREFACE

The Fishery Management Plan (FMP) for Coral Reef Ecosystems of the Western Pacific Region is the “first ever ecosystem-based plan for fisheries developed in the U.S.” (NOAA 2001-R103, 1/30/01).

The central feature of the FMP is adaptive management, which recognizes the uncertainty, changing conditions and resilience associated with coral reef ecosystems. The emphasis is not on controlling short-term harvest so much as maintaining coral reef ecosystems and their capacity for natural resource regeneration for the long-term.

The many preparers of the FMP were often sharply divided on how to best achieve this objective. Their differences may be explained by “conceptual pluralism” (Norgaard 1994). Following Colchester (1994), Long and Long (1992), Blaikie and Jeanrenaud (1996), and Berkes (1999), resource management needs to recognize pluralistic thinking:

1. There exist different actors (i.e., stakeholders) who relate in different ways to resources (coral reef and other);
2. The actors define knowledge, ecological relations and resources in different ways and at different levels of geographic scales;
3. They bring to bear on these definitions their culture and their experience; and,
4. They will use different definitions in pursuit of their own interests or political agendas.

The most fundamental difference is between the Western perspective-that even low levels of human activity are an intrusion on the ecosystem-and the Pacific Island indigenous vision-that proper use of natural resources is essential to their sustainability, and that people who have no personal relationship with the resources lose respect for them.

The Magnuson-Stevens Fishery Conservation and Management Act, Endangered Species Act, and other pertinent U.S. laws, as the products of Western culture, represent but one cultural perspective on natural resource management. Pacific Island management systems represent another. These systems have allowed Pacific Islanders to survive for several millennia by coexisting with coral reef resources, and are best viewed as adaptive responses that have evolved over time, not as mere traditions (Berkes 1999). As a pluralistic society, the United States should provide room for both Western and non-Western knowledge of and perspectives on coral reef resource conservation.

Rooted in diverse views and cultures, different stakeholders may never be able to reach consensus. This FMP provides a resource management system open to alternative ways of thinking and a methodological framework in which different cultures, stakeholders and knowledge systems can find common ground in the area of coral reef management.

EXECUTIVE SUMMARY

The Fishery Management Plan (FMP) for Coral Reef Ecosystems of the Western Pacific Region was developed by the Western Pacific Regional Fishery Management Council (WPRFMC, or Council) using an ecosystem-based approach. A recent report to Congress by the Ecosystem Principals Advisory Board recommends that FMPs be developed as “Fisheries Ecosystem Plans” covering the ecosystems under a Council’s jurisdiction. This FMP represents the first such fishery ecosystem plan developed in the United States.

About 70% of the world’s coral reefs and 94% of the coral reefs under U.S. jurisdiction are located in the Pacific Ocean. Coral reefs cover an estimated 15,852 km² of the shallow ocean bottom around U.S. Pacific Island areas served by the Council, which includes the State of Hawaii, the Territories of American Samoa and Guam, the Commonwealth of the Northern Mariana Islands, and the Pacific remote island areas (PRIAs) of Johnston Atoll, Kingman Reef, Palmyra and Midway Atolls, and Jarvis, Howland, Baker and Wake Islands. Some 90% of coral reefs in the region’s exclusive economic zone (EEZ, or the 200-mile limit) are found in remote areas, away from fishing communities.

Coral reefs are very diverse ecosystems that provide many benefits to mankind. They build atolls, protect island shores from coastal erosion and wave damage, support fisheries of cultural and economic value, provide a natural medicine cabinet for traditional healing and biomedical research, and serve as museums of the world’s tropical marine biodiversity.

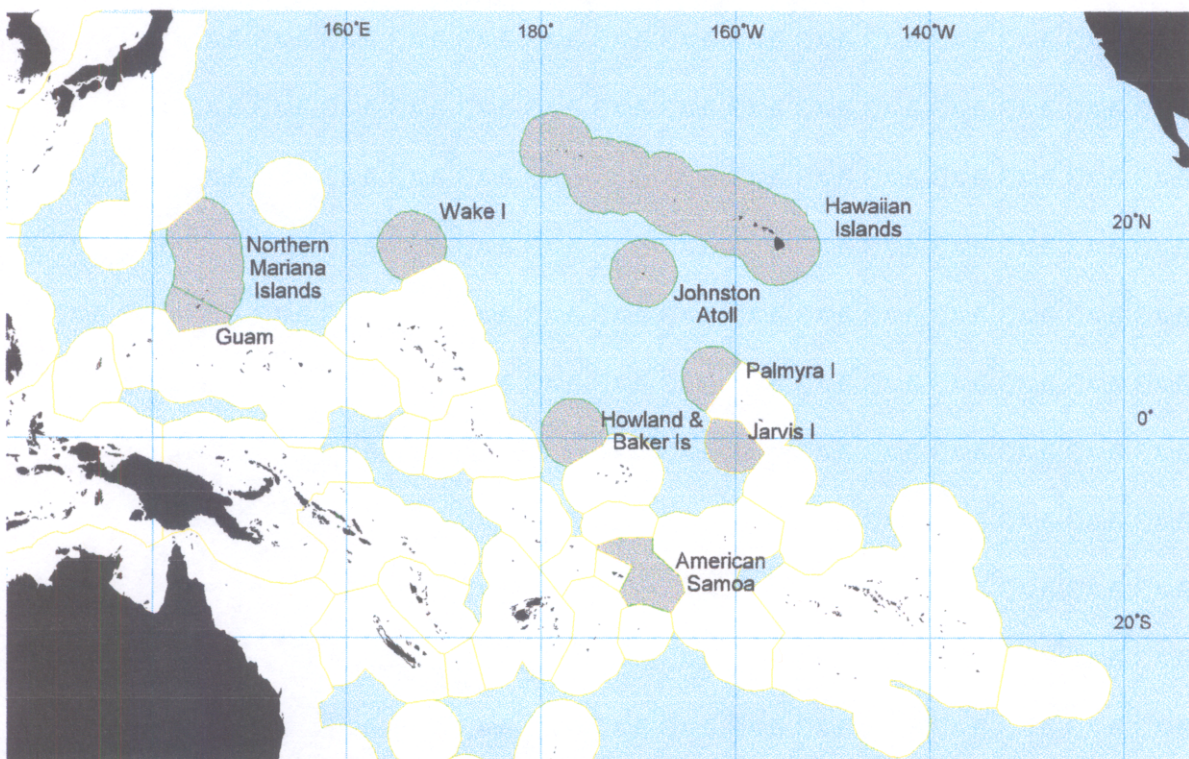


Figure E1: Western Pacific Region. EEZ areas under WPRFMC jurisdiction in grey.

The Pacific Islands were settled long ago, and these indigenous people represent an important part of U.S. Pacific island populations today. Their cultures historically depended on coral reefs to meet varied social-subsistence, economic, and spiritual needs. These needs and values continue to shape and support these distinct cultures today. Resident and tourism-related recreation—important parts of contemporary island economies—also depend on healthy nearshore coral reef resources.

This FMP uses a precautionary approach; in so doing it addresses potential problems before they can occur and establishes a management regime that can quickly adapt to changes. Local regulations control most of the impacts of resource exploitation on nearshore coral reefs in settled areas. This FMP complements these efforts by implementing measures to conserve coral reef ecosystems in the Western Pacific Region's EEZ. Although these areas have as yet been minimally exploited, there is potential for fisheries to expand into them. Possible sources of this expansion include existing nearshore fisheries for coral reef species, new fisheries for the live fish markets in Southeast Asia, expanded fisheries for coral and "live rock" for the U.S. aquarium trade, and developing fisheries for pharmaceutical uses. In addition, the holistic vision intrinsic in this plan allows impacts—stemming from natural environmental changes, other FMP managed fisheries, and non-fishing anthropogenic impacts, such as dredging—to be better understood.

FMP Goal and Objectives

The overall goal of the Coral Reef Ecosystems FMP (CRE-FMP) is to establish a management regime for the entire Western Pacific Region that will maintain sustainable coral reef fisheries while preventing any adverse impacts to stocks, habitat, protected species, or the ecosystem. Based on this goal, and consistent with an ecosystem-based management approach, the Council formulated eight objectives. The objectives promote sustainable use of coral reef resources, especially by fishing communities and indigenous fishermen in the region, an adaptive management approach based on fishery-dependent and fishery-independent research, marine protected areas and habitat conservation, cooperative and coordinated management by the various agencies concerned with the conservation of coral reef resources, and education to foster public support for management. These objectives are:

1. To foster sustainable use of multi-species resources in an ecologically and culturally sensitive manner, through the use of the precautionary approach and ecosystem-based resource management.
2. To provide a flexible and responsive management system for coral reef resources that can rapidly adapt to changes in resource abundance, new scientific information, and changes in fishing patterns among user groups or by area.
3. To establish integrated resource data collection and permitting systems, establish a research and monitoring program to collect fishery and other ecological information, and to collect scientific data necessary to make informed management decisions about coral reef ecosystems in the EEZ.

4. To minimize adverse human impacts on coral reef resources by establishing new—and improving existing—marine protected areas, managing fishing pressure, controlling wasteful harvest practices, reducing other anthropogenic stressors directly affecting coral reef resources, and allowing the recovery of naturally-balanced reef systems. This objective includes the conservation and protection of essential fish habitats.
5. To improve public and government awareness and understanding of coral reef ecosystems and their vulnerability and resource potential in order to reduce adverse human impacts and foster support for management.
6. To collaborate with other agencies and organizations concerned with the conservation of coral reefs, in order to share in decision-making and to obtain and share data and resources needed to effectively monitor this vast and complex ecosystem.
7. To encourage and promote improved surveillance and enforcement to support the plan's management measures.
8. Provide for sustainable participation by fishing communities in coral reef fisheries and, to the extent practicable, minimize the adverse economic impacts on such communities.

Management Measures

In order to achieve its goal, the FMP implements the following management measures.

Marine Protected Areas (MPAs)

EEZ coral reefs in unpopulated areas—the Pacific remote island areas, the Northwestern Hawaiian Islands, and Rose Atoll in American Samoa—are designated MPAs. The outer boundary for these MPAs is the 50-fm isobath. A zone-based management approach is applied to MPA design and designation, distinguishing no-take and low-use areas. Fishing is prohibited in no-take MPAs, including that by existing FMP fisheries. No-take MPAs are delineated by the 10-fm isobath, except for certain ecologically sensitive areas where the boundary is extended to the 50-fm isobath. These areas are French Frigate Shoals, Laysan Island, the northern half of Midway Atoll, Jarvis Island, Howland Island, Baker Island, Kingman Reef and Rose Atoll. All other areas within the 50-fm isobath would by default become low-use MPAs, where fishing is tightly controlled by a special permit requirement and other conditions for fishing. Although not an MPA in the sense of having these restrictions, Guam's Southern Banks is designated as a no-anchoring zone.

All extractive activities would be prohibited in no-take MPAs, except for small harvests related to scientific research and related resource management. Existing FMPs are amended to prohibit take of their respective management unit species (MUS) in addition to this FMP's MUS from no-take MPAs. In low-use MPAs existing fishing activities, and recreational fisheries by residents on certain remote islands, would be allowed under special permits. New fisheries and fishing by indigenous people could be allowed under special permits. Existing FMP fisheries in low-use MPAs would follow the permit and reporting requirements already established in their respective FMPs.

All fishing vessels transiting MPAs, including those regulated under the Council's already-implemented FMPs, would be required to carry insurance in order to pay for the costs of vessel removal and habitat damage mitigation in the event of a grounding. The Council felt that prohibiting large non-fishing vessels, and in particular cruise ships, from entering MPAs would be beneficial. However, the Council does not have the authority to regulate these vessels. Several longer-term, cooperative efforts are proposed to manage the potential impacts of these vessels.

Using the framework process, vessel anchoring areas may be designated in MPAs at a future date. The only immediate restriction in this FMP applies to large fishing vessels (those longer than 50 ft) at Guam's Southern Banks, which would be prohibited from anchoring.

Permits and Monitoring

Locally administered monitoring systems (such as creel surveys) will provide information from populated areas. If needed, a general permit could be developed and implemented for EEZ reef fisheries, using a so-called framework process to modify FMP management measures. For unpopulated areas, where coral reefs would be designated as marine protected areas, special permits would regulate fishing and other types of fishing-related resource use, except in no-take MPAs where fishing would not be allowed. Special permits would also be required for new fisheries on coral reef taxa previously unreported in catch reports. Under this permit regime, the harvesting of live rock and coral would be specifically prohibited. However, the Council identified four exemptions to this permit regime. Permit holders in other FMP-managed fisheries would not have to obtain an additional permit for incidental catch of coral reef taxa, because they are already required to report all incidental catch. Indigenous people, aquaculture operations, and scientific management activities would be exempted from the prohibition on the harvest of live hard coral and wild live rock. These three activities would require permits: a special permit for the first two and a scientific permit, established under existing regulations and issued by the NMFS Regional Administrator, for the third. In addition, the allowable take would be limited.

Fishing Gears and Methods

Three conditions on gear use, in order to minimize habitat and resource impacts, are incorporated into this FMP. The Council also developed a list of allowable gear types, which includes the following: (1) hand harvest; (2) spear; (3) slurp gun; (4) hand/dip net; (5) hoop net for Kona crab; (6) throw net; (7) barrier net for aquarium fish; (8) surround/purse seine net for targeted schooling fish (e.g., *akule*, baitfish, *weke*) with a minimum of bycatch; (9) hook-and-line (powered and unpowered handlines, rod and reel, and trolling); (10) traps (with conditions); and (11) remote operating vehicles/submersibles. The following gears are specifically prohibited for coral reef management unit species: gillnets, trawls, dredges, tanglenets, longlines, explosives, and poisons. Finally, scuba-assisted spearfishing is prohibited at night in the Pacific remote island areas and the Northwestern Hawaiian Islands.

Other Management Measures

ADAPTIVE MANAGEMENT: A framework process, providing an administratively simplified procedure for FMP modification, is an important component of the FMP.

NON-REGULATORY MEASURES: A set of measures, consistent with FMP objectives, will be implemented by the Council outside of the regulatory regime. This includes the process and criteria for essential fish habitat consultations, formal plan team coordination to identify and address ecosystem impacts from existing FMP fisheries, facilitating consistent state and territorial level management, and research and education efforts.

Consideration for the NWHI Coral Reef Ecosystem Reserve

On 4 December 2000 President Clinton issued Executive Order (EO) 13178 which established the NWHI Coral Reef Ecosystem Reserve (NWHI Reserve). That Order was later amended by Executive Order 13196 issued 18 January 2001. The NWHI Reserve extends from the seaward boundaries of the Hawaiian Islands National Wildlife Refuge and the State of Hawaii to 50 nmi around all NWHI. The NWHI Reserve is intended to be a temporary management regime until completion of the process to designate certain coral reef areas around the NWHI as a National Marine Sanctuary. Conservation and management measures contained in the NWHI EOs include:

1. A cap on commercial and recreational fishing throughout the NWHI Reserve at the “previous year’s” (from 4 December 2000) level of effort and take. (The bottomfish level would be based on an individual’s average over the previous 5 years).
2. Establishment of 15 Reserve Preservation Areas in which almost all activities are prohibited seaward to 100 fm around most islands. (Bottomfishing and recreational trolling would be allowed in waters deeper than 25 or 50 fm around some islands.)
3. Prohibition on anchoring on live or dead coral, where the bottom can be seen.
4. Prohibition on anchoring where buoys are available or outside a yet-to-be-determined designated area.
5. General prohibition on the removal of living/non-living resources (with exceptions).
6. Prohibition on the taking or touching of living or dead coral.
7. General prohibition on discharging or depositing any material, except cooling water or engine exhaust (with few exceptions).
8. Additional restrictions on non-fishing activities.
9. Native Hawaiian uses to be allowed in yet-to-be-identified sub-areas. These activities would be restricted to subsistence, cultural, and religious purposes and would be allowed in both the Reserve and Reserve Preservation Area.

The NWHI EOs also established the NWHI Reserve Council, whose membership includes Native Hawaiian representatives, representatives from non-Federal scientific communities, representatives from non-governmental organizations, commercial and recreational fishing industry representatives, an ocean-related tourism industry representative, a non-Federal marine conservation representative, a citizen at large representative and one representative from the State of Hawaii. The membership also includes one representative each from the

Department of the Interior, the Departments of State and Defense, the United States Coast Guard, the National Marine Fisheries Service, the Hawaiian Islands Humpback Whale National Marine Sanctuary, the National Science Foundation, the Marine Mammal Commission and the Western Pacific Regional Fishery Management Council. The function of the NWHI Reserve Council is to provide the Secretary of Commerce with advice and recommendations on the Reserve Operations Plan and designation and management of any sanctuary. However, the Council is not tasked with preparing or developing any plans or documents.

Currently, it is unknown how the NWHI EOs will ultimately affect existing fisheries operating within the boundaries of the NWHI Reserve. However, because these executive orders will prohibit almost all extractive activities to 50 nautical miles around most islands, the NWHI Reserve will provide an ideal location for conducting scientific research, as it could provide unique opportunities for:

- Establishing a baseline for assessing the health of coral reef ecosystems;
- Determining the impacts of oceanic regime shifts on reproduction, recruitment and productivity of the coral reef ecosystem and associated marine resources;
- Assessing the effects of oceanic regime shifts on representative coral reef habitats (i.e., effects on the coral reef ecosystem at Kure vs. effects on the coral reef ecosystems at Nihoa);
- Determining the degree of habitat impacts attributed to storms and hurricanes;
- Determining the primary factors influencing the survival of the Hawaiian monk seal;
- Determining ecological relationships between reef fish with the surrounding environment and population dynamics during different life stages; and,
- Assessing and monitoring ecosystem dynamics in an environment relatively free of anthropogenic impacts.

The NWHI Reserve may also provide an impetus to generate funds and direct resources toward cleaning marine debris, avoiding vessel groundings, and cleaning-up toxic sites such as at Tern Island, French Frigate Shoals. Additionally, the NWHI Reserve could also provide expanded opportunities for scientific research and education activities, and closer coordination among stakeholders in determining research priorities. Administratively, the establishment of the NWHI Reserve would alleviate some of the burdens to fishery management agencies tasked with developing fishery management plans and issuing permits for NWHI fisheries.

Scientific data collected on marine organisms in the NWHI in the absence of fishing or other human activities would be relatively academic. The information would reflect an ecosystem where changes in species abundance and productivity would be largely related to prevailing oceanographic and environmental conditions. Because at least portions of this unique coral reef ecosystem, with low species diversity and high endemism, are surviving at or near the limit of suitable environmental conditions, the applicability of this information as a baseline in comparison with unexploited coral reefs in the Western Pacific Region is open to debate.

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