

**FINAL ENVIRONMENTAL IMPACT STATEMENT
FOR THE
FISHERY MANAGEMENT PLAN
FOR
CORAL REEF ECOSYSTEMS
OF THE
WESTERN PACIFIC REGION**

Volume II

Western Pacific Regional Fishery Management Council

October 2001



A publication of the Western Pacific Regional Fishery Management Council pursuant to National Ocean and Atmospheric Administration Award No. NA97FC0190

COVER SHEET

[x] Final Environmental Impact Statement (Separate EIS)

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PROPOSED ACTION: Approval and implementation of the fishery management plan for Coral Reef Ecosystems of the Western Pacific Region.

Abstract:

The proposed action is to implement a fishery management plan for Coral Reef Ecosystems (CRE) in the western Pacific under the provisions of the Magnuson-Stevens Fishery Conservation and Management Act (MSFCMA). The plan proposes to (1) establish specific and comprehensive regulations -- fishing permit and reporting requirements, allowable fishing gear, "no-take" and "low-use" marine protected areas -- for the EEZ to anticipate and avoid adverse impacts on coral reef resources and ecosystems from potentially damaging fishing activities; (2) create a framework procedure for timely regulatory action to adapt to new information and changes in fisheries; (3) encourage coherent and coordinated management, monitoring and enforcement across jurisdictional boundaries to address impacts such as illegal foreign fishing of coral reef resources in remote areas of the U.S. Pacific Islands; degradation of essential fish habitat in nearshore (non-EEZ) coral reef areas; damage to reefs from derelict gear originating from outside of the Western Pacific Region; (4) establish a procedure to assess and control possible ecosystem effects of fishing activities under the existing FMPs for bottomfish, crustacean and precious coral fisheries in the western Pacific; and, (5) amendments through four existing FMPs to prohibit fishing (biological removal) in no-take marine protected areas (MPAs) and require insurance for operation/transit of MPAs.

EXECUTIVE SUMMARY

This final environmental impact statement (FEIS) was prepared to examine impacts of implementing the proposed Fishery Management Plan (FMP) for Coral Reef Ecosystems of the Western Pacific Region. An environmental impact statement is required under the National Environmental Policy Act (NEPA) for federal actions that may significantly affect the quality of the human environment. The FEIS also incorporates the relevant environmental impact analyses for FMP amendments for crustaceans, bottomfish and seamount groundfish, precious corals, and pelagic fisheries.

The Coral Reef Ecosystems FMP (CRE-FMP) was developed by the Western Pacific Regional Fishery Management Council (the Council), based on the ecosystem approach. A recent report to Congress in 1999, by the Ecosystem Principals Advisory Panel (EPAP) recommends that FMPs be developed as "Fisheries Ecosystem Plans" covering the ecosystems under Council jurisdiction. This FMP represents the first fishery ecosystem plan developed in the United States.

The FMP would address current and emerging problems due to interactions of humans and coral reefs in the western Pacific exclusive economic zone (EEZ). Although local regulations control many of the impacts of resource exploitation on nearshore coral reefs in settled areas, exploitation of coral reef ecosystems remains relatively uncontrolled in federal waters of the EEZ. Although these areas have been minimally exploited to date, fishermen are interested in expanding into these areas. Fishery sectors that could expand into the EEZ include current 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 applications. In addition, CRE-FMP measures would help managers to better understand impacts due to natural environmental changes, other FMP-managed fisheries, and non-fishing related impacts, such as dredging.

Description of the Alternatives Considered in this EIS

To address these problems, four alternatives, including the status quo (No-action alternative), were examined. Alternative 2 would establish low-use marine protected areas from 0-50 fathoms in the Northwestern Hawaiian Islands (NWHI) and Pacific Remote Island Areas (PRIAs). Alternatives 3 (the Preferred Alternative) and 4 (substantial and maximum additional protection to coral reef resources) contain four primary management measures: (1) marine protected areas; (2) permits and reporting requirements; (3) fishing gear and methods; and, (4) other ecosystem-based management measures. Each alternative has different components and options nested within it. (For a summary of the management measures in each alternative see the table at the end of this Executive Summary.) The environmental effects of each of the alternatives, management measures, components, and options have been analyzed in this EIS. In June 2000, the Council tentatively adopted a preferred alternative and management options. In June 2001,

the Council finalized its preferred alternative with several modifications. The alternatives and options considered are listed below.

Alternative 1: *No Action* - under this alternative no new MPAs of any type would be implemented.

Alternative 2: *Minimal Additional Protection to Coral Reef Resources* - under this alternative low-use MPAs would be established for EEZ waters from 0-50 fathoms around each of the NWHI and each of the PRIAs. In addition, no anchoring by large vessels would be allowed on Guam's offshore southern banks. Midway Atoll, which is physically located in the NWHI, would be exempted from these MPAs.

Alternative 3: *Substantial Additional Protection to Coral Reef Resources (Preferred Alternative)* - under this alternative no-take MPAs would be established for all EEZ waters from 0-10 fathoms in the NWHI as well as EEZ waters from 0-50 fathoms around French Frigate Shoals, Laysan Island, and the northern half of Midway Island. No-take MPAs would also be established for EEZ waters from 0-50 fathoms around American Samoa's Rose Atoll, and Jarvis, Howland, Baker and Kingman in the PRIAs. In addition, low-use MPAs would be established in EEZ waters from 10-50 fathoms around the remaining NWHI (0-50 fm in the southern half of Midway Atoll), as well as EEZ waters from 0-50 fathoms around Palmyra, Johnston, and Wake Islands. Sustainable use of coral reef resources for customary and traditional purposes will be permitted in the low-use MPAs of the NWHI. Anchoring of large vessels (greater than 50 ft in length) would be prohibited on Guam's offshore southern banks. Insurance would be required for all fishing vessels operating in MPAs.

Alternative 4: *Maximum Additional Protection to Coral Reef Resources* - under this alternative no-take MPAs would be established for EEZ waters from 0-100 fathoms around all of the region's islands and atolls. Due to the broad extent of these areas, there would be no low-use MPAs under this alternative.

Measures Incorporated into the Alternatives

Measure 1. Marine Protected Areas: MPAs are areas where some or all activities are prohibited. MPAs holistically protect ecosystems and multi-species resources that cannot be addressed by a species-by-species approach. Options considered were the location of these areas (off all the Pacific islands, or only in remote areas), how much of the MPAs would be no-take areas versus low-use areas for resource extraction, and what separate types of activities would be allowed or prohibited in these areas.

Measure 2. Permits and Reporting Requirements: Permits are used to identify participation in a fishery. They provide base data for fishery monitoring, catch reporting, and management. The options for permit requirements include type of permits, who is required to have a permit to harvest reef resources, prohibitions on harvest of certain reef resources, and other conditions of the permit.

Measure 3. Fishing Gear/Methods: Gear restrictions are used to prevent overfishing, protect habitat from direct impacts, and limit bycatch. Options considered include defining legal gear types so as to prohibit other gear types, and special restrictions for SCUBA spearfishing.

Measure 4. Other Ecosystem-Based Management Measures: The other measures proposed in the plan include a framework for adaptive management, a process to identify and address possible impacts of existing FMP fisheries on coral reef ecosystems, and other non-regulatory measures such as education. None of these constitute “action” in terms of NEPA.

Summary of Impacts of the Alternatives and Options

Environmental Impacts

- Because there is currently low fishing effort for coral reef taxa in remote areas of the EEZ, there are essentially no immediate impacts of implementing any alternative in these remote areas, except in bottomfish and lobster fisheries operating in NWHI under existing FMPs and low levels of recreational and subsistence fishing at Johnston, Wake, Palmyra and Midway Atolls.
- For less remote areas, the preferred options under Alternatives 2, 3, and 4 would provide additional conservation than the status quo because gear types would be regulated, commercial harvest of live rock and corals would be prohibited, and resource removals would be monitored. If monitoring indicates that resource conditions warrant conservation action, these can more quickly be brought about through the framework process outlined in Section 2.4.
- Compared to the status quo and Alternative 2, Alternatives 3 and 4 reduce the potential for overfishing of reef resources in the future by implementing the preferred options for setting aside marine protected areas, establishing permit and reporting requirements for monitoring, and gear restrictions. Spawning adults of the more valuable food fishes would be better protected by prohibiting spearfishing with scuba gear at night, when they are most vulnerable.
- Compared with the status quo, Alternatives 3 and 4 provide for improved habitat protection and reduced discarding. Only specified gears would be allowed; unattended nets would be specifically prohibited for these reasons. In no-take MPA zones, all fishing gear including lobster traps and bottomfish hook-and-line fishing would be prohibited

under Alternatives 3 and 4. The option to prohibit harvest of coral and live rock under Alternatives 3 and 4 would be expected to result in habitat conservation. Lastly, the FMP requires consultations for federal activities to minimize effects from fishing and non-fishing activities on essential fish habitat.

- Compared to the status quo, Alternatives 3 and 4 could slow the introduction of exotic species through conditions on passage of all fishing vessels in MPAs.
- Alternatives 3 and 4, and the options to set aside some no-take MPA zones, would be expected to result in positive impacts for conserving reef ecosystems and marine diversity. No-take MPAs may conserve a large reservoir of spawning biomass and genetic material for multi-resource coral reef resources, including endemic and rare species.
- The MPAs proposed under Alternatives 3 and 4 may reduce impacts of fishing on protected species. Existing marine protected areas surrounding national wildlife refuges would be expanded in sensitive areas, in particular, French Frigate Shoals, and Laysan Island. Vessel groundings, which pose some of the most serious human threats to these protected species habitats, would be expected to be reduced under Alternatives 3 and 4 provisions for MPA designations and permit and vessel passage controls.

Social and Economic Impacts

- The status quo, Alternative 2, and the Preferred Alternative (3) do not restrict collection of coral reef resources for customary and traditional indigenous uses in the EEZ around the main inhabited islands and provides incentives through preferential access to indigenous use sub-zones of MPAs, which could be implemented through framework action. Alternative 4 would prohibit all types of fishing shallower than 100 fathoms throughout the EEZ.
- The Preferred Alternative (3) and options would mitigate most of the potential impacts on existing fisheries, but existing fishing effort could be displaced or become more costly to conduct around some of the NWHI, Palmyra, Johnston, and Wake islands. Alternative 4 would displace all coral reef fisheries and other fisheries operating in the coral reef ecosystem.
- The Preferred Alternative (3) and options for no-take zones would allow recreational fishing activities for tourists to continue at Midway Atoll, but it would deter future development of most PRIAs as sportfishing destinations. Alternative 4 could displace recreational activities at Midway.
- The Preferred Alternative (3) and options for locations of no-take MPAs are likely to cause some displacement from familiar grounds in the NWHI bottomfish fishery and, to a far lesser extent, NWHI lobster fishery. Alternative 4 would displace all fishing effort for

these fisheries. For Alternative 3, fishing effort is likely to be redirected to other islands and banks in the NWHI. This could increase the cost of fishing and prevent the harvest of underutilized target resources, but it is not expected to cause a major displacement of participants. Under Alternative 4, fishing effort would likely be displaced to state and territorial waters. The number of permits in both fisheries is fixed under limited access plans, so opportunities for new participants are already limited.

- Although NWHI bottomfish permit holders would lose access to a few familiar and productive fishing grounds as a result of the Preferred Alternative (3) and options, closure of French Frigate Shoals and Laysan Island would likely have less effect than closure of more productive areas of the NWHI. The preferred option for no-take areas have accounted for 10 % of the recent total bottomfish harvest in the NWHI fishery. Applied to recent (1994-1998) landings data, this percentage represents about 36,047 lbs. of bottomfish with an ex-vessel value of \$115,350. Alternative 4 would cause a complete shutdown of this fishery.
- The Preferred Alternative (3) and options for no-take zones would incur only minimal costs to lobster fishing activities in the waters around French Frigate Shoals and Laysan Island. These areas have historically accounted for about 1.2% of the total lobster harvest in the NWHI fishery. Applied to recent (1996-1999) landings data, this percentage represents about 3,075 lbs. of spiny and slipper lobsters with an ex-vessel value of \$16,308. It is likely that fishery participants could recover this loss in revenue by moving to other fishing grounds. Alternative 4 would cause a complete shutdown of this fishery.
- Closure of some or all fishing grounds in the NWHI would also have a negative economic impact on local businesses that directly or indirectly support and are supported by the fishery.
- In addition to potential economic losses associated with closure of some fishing grounds in the NWHI, there would be the loss of lifestyle, assuming that displaced fishermen cannot find an equally satisfactory alternative way of life.
- Closure of some or all fishing grounds in the NWHI would also likely have a negative impact on those who value the continued existence of Hawaii's maritime tradition and culture.
- Closure of some or all NWHI bottomfish fishing grounds would have an impact on seafood consumers by reducing the amount of fresh bottomfish available for sale.
- Technically complex and customized permits to be issued under Alternative 3 would significantly increase cost of administration and enforcement.

Justification for the Preferred Alternative

While a minimal amount of fishing pressure currently exists in the coral reef ecosystem management area for the proposed management unit species, this Fishery Management Plan has been developed as a framework upon which to address potential management needs. The Plan has been drafted to immediately protect large portions of coral reef and associated resources, while allowing flexibility to adapt to a wide variety of potential management issues as resource utilization develops. Thus, this FMP should be viewed as a preemptive management regime as well as a work in progress. The preferred alternative comprises the following four management measures. The rationale for these measures is as follows:

No-Take Marine Protected Areas: 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 north half of Midway Atoll, and Jarvis, Howland and Baker Islands, Kingman Reef, and Rose Atolls. These no-take MPAs apply to the existing FMPs of the Council. The Council felt that no-take should apply for all activities save limited research and management activities which could not occur elsewhere.

The ecological significance of these areas as remote and near-pristine reefs were driving factors in choosing these areas as the initial MPAs for this FMP. Their proximity to important Hawaiian monk seal colonies was another reason for choosing these areas. Seaward boundaries are delineated by following the relevant depth contours around the indicated areas. Basing these seaward boundaries on either the closest State of Hawaii commercial catch reporting grid square, inclusive of the relevant contours, or on circles drawn around islands or banks that are inclusive of these areas was considered, but rejected due to the significantly larger closed area that would result. Most of this additional closed area would be beyond the depth of coral reefs and would result in a major impact on existing fisheries.

Low-use Marine Protected Areas: The Council proposes a zone-based management approach to designate geographic areas for prescribed uses. Zone-based management allows for unique regulations for areas of varying ecological and socio-cultural importance, which has been successfully employed in other coral reef ecosystems and was preferred by the Council. All EEZ coral reefs around the NWHI not designated for no-take areas are designated as low-use MPAs. Other low-use MPAs are designated for coral reefs in the EEZ around Palmyra, Johnston and Wake atolls. The seaward boundaries preferred for all low-use MPAs would extend to a uniform depth of 50 fm. These locations were chosen for reasons similar to those used to choose those of no-take MPAs, but they allow existing fisheries to continue and also permit closely monitored new fisheries in ecologically and socio-culturally important areas. The offshore banks south of the island of Guam will be designated as a no-anchor zone to prevent coral reef habitat damage from anchoring of vessels larger than 50 feet.

Permits and Reporting: Special permits and reporting are required for the harvest of coral reef resources in the low-use marine protected areas. Vessels regulated and targeting species managed by other FMPs would be exempt from this requirement. Special permits and reporting

will also be required for potentially (but not previously) harvested coral reef taxa throughout the region's EEZ. Regional permit and reporting requirements for the remaining EEZ waters would continue for currently harvested coral reef taxa where reef resources are actively fished and managed under local laws and regulations. The Council preferred to retain local jurisdictions' reporting requirements for current practices in the populated regions, enacting general or special permit requirements under a framework provision at a later date if deemed necessary.

Due to their ecological vulnerability, the preferred alternative would prohibit the collection of live stony coral or live rock for commercial purposes, except small amounts that could be collected under a special permit for use as seed stock for aquaculture or for customary and traditional indigenous purposes.

Allowable Gears and Methods: The list of allowable gears is based primarily on these gear types potential for minimizing damage to essential fish habitat (EFH). Adverse impacts from fishing gear may include physical, chemical, or biological alterations of the substrate and loss of, or injury to, benthic organisms, prey species and their habitat, and other components of the ecosystem. Catch selectivity is a second criterion for allowable gear; gears which produce a minimum of bycatch would be allowed.

Summing Up: The Preferred Alternative's combination of management measures should better protect the coral reef environment and allow the region's coral reef ecosystem resources to be better managed. Management measures in the Coral Reef Ecosystem FMP combine harvest controls with careful monitoring in a manner that allows the controlled and ecologically sensitive use of these vital resources.

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