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WESTERN
PACIFIC
REGIONAL
FISHERY
MANAGEMENT
COUNCIL

New Federal Regulations Proposed for Fisheries in Coral Reef Ecosystems of the Western Pacific Region

Summary

INTRODUCTION

The Western Pacific Regional Fishery Management Council (Council) is the policy-making organization for the management of fisheries in the US Pacific Island Area exclusive economic zone (EEZ). This area extends from the boundary of territorial waters (generally 3 nm offshore) to the limit of the EEZ (200 nm offshore) around the State of Hawaii, Territories of American Samoa and Guam, Commonwealth of the Northern Mariana Islands and the unincorporated islands of Johnston Atoll, Kingman Reef and Palmyra, Jarvis, Howland, Baker, Midway and Wake Islands (Figure 1). The Council develops and, together with the National Marine Fisheries Service (NMFS), implements Fishery Management Plans (FMPs) for these waters. Four FMPs currently exist for the bottomfish and seamount groundfish fisheries, pelagic fisheries, crustacean fisheries and precious coral fisheries (which does not include reef-building corals). The Bottomfish FMP regulates permitted limited entry vessels in two Northwestern Hawaiian Islands (NWHI) zones: 10 in the Mau Zone and 7 in the Hoomalu Zone; most fishing occurs within 12 miles of shore. The Crustaceans FMP regulates 15 permitted limited entry vessels in the NWHI; most fishing occurs within 12 miles of shore, but is prohibited shallower than 10 fm and within 20 mi of Laysan.

Roughly 70% of the world s coral reefs and approximately 94% of the Coral Reefs under US jurisdiction are located in the Pacific Ocean. Nearly 16,000 km^2 of coral reef occur in US waters of the Western Pacific, most of which (nearly 70%) is in the EEZ (Table 1). Development of the Coral Reef Ecosystem FMP is one of the Council s top management priorities. Until this plan was developed, there were no specific management plans or comprehensive regulations addressing the use of coral reef resources, which could include potentially destructive harvesting and bioprospecting on the vast and largely pristine coral reefs of the US Western Pacific Region. This was of special concern because of the potential for an imminent increase in the exploitation of these offshore coral reef resources, combined with the vulnerability of the species involved. Increased exploitation may arise because 1) tropical marine resources

in the South China Sea have seriously diminished and foreign fishing vessels are seeking new fishing grounds; 2) the growing live reef fish trade has compelled the fishing industry in Asia to move further east in their acquisition of resources; 3) rapidly developing technology is opening previously unavailable offshore and deepwater resources, including bio-prospecting for marine organisms valued by the biomedical and pharmaceutical industries; and 4) the demand for coral reef resources (e.g. live rock) is expanding rapidly, especially in Asia, while the supply is rapidly diminishing. Although the coral reef resources in EEZ have not been exploited on a large scale to date, the growing potential for unmanaged exploitation has compelled the Council to proactively prepare and oversee implementation of this Coral Reef Ecosystem FMP. A long-term economic benefit will be realized if the resources are harvested on a sustainable basis.

The overall goal of the FMP is to ensure coral reef resources are effectively managed to achieve a sustainable balance of economic productivity, ecological integrity and social acceptability. A coral reef ecosystem has ecological integrity if it retains its biological diversity, size structure and abundance over time and when all the elements in the ecosystem, along with the processes and functions that support these elements, are maintained. Solid scientific justification and the power of legal regulation must be coupled with the sincere belief by the resource users, especially those living in closest proximity to the resource, that the management policy is suitable. This suitability must take into account the culture, traditions and political perspectives of all resource users. Another goal of the FMP is to maintain consistency with state and territorial fishing regulations and landing laws, to the degree practicable.

MANAGEMENT PROGRAM

Under this FMP, the Council, through federal regulations, will implement a regime to manage and regulate the harvest of coral reef resources of the US Western Pacific Region under its jurisdiction. The Council has selected the following initial management measures as the preferred alternative for the management regime. (For waters surrounding the NMI these management measures apply only to the offshore zone 3-200 nm.)

Management Unit Species/Taxa

Two groups of species or taxa that will comprise the management unit are proposed that include virtually all biota in the coral reef ecosystem (except MUS already covered under existing FMPs; this includes the existing bottomfish and crustaceans [lobster] fisheries in the NWHI):

Harvested Coral Reef Taxa are those organisms which are currently harvested (Table 2)
Non-targeted Coral Reef Taxa are those organisms for which there is no known harvest (i.e., all other species of the coral reef ecosystem)

Preferred Management Measures

1. Fishing permit and reporting requirements

A combination permit process is proposed that would require one of either two types of permits depending on the targeted species and area fished:

general permit required for harvested taxa
special permit required for non-targeted coral reef ecosystem taxa
special permit required for harvested taxa in marine protected areas
no permits for commercial take of wild live rock and live hard corals
existing FMP fisheries are unaffected by this measure

2. Allowable Fishing Gears and Methods

Allowable fishing gear would be limited to that which is selective and non-destructive, as follows:

Allowable gear:
ROV/submersibles hand harvest
handline
hook-and-line rod and reel spear
slurp gun hand net/dip net barrier net (*aquarium*)
surround/purse net (*for akule and aku bait fishing only*)
nets must be tended at all times
traps will be allowed in appropriate areas and with appropriate conditions if permanently marked to identify owner
prohibited are use of spear with scuba at night, or use of poisons, explosives, or intoxicating substances
gear used under existing FMPs is exempt

3. Establish Marine Protected Areas (MPAs):

Marine Protected Areas are designated areas of special value for the protection, conservation and management of significant coral reef areas. MPAs are proposed as described for the following areas (existing FMPs are exempt):

Wake Atoll, Johnston Atoll, Jarvis Island, Howland Island, Baker Island, Kingman Reef and Palmyra Atoll: Special permit required to fish at depths shallower than 50 fathoms
NWHI: MPA to a depth of 50 fathoms; 0 10 fathoms zoned no-take, ; 10 50 fathoms zoned for limited take, subject to special permit
Guam s Southern Banks: MPA prohibits anchoring by fishing vessels >50 ft only on these banks

4. Framework Actions:

A framework regulatory process will be included as part of the FMP which can allow management adjustments to be made to the plan more rapidly than through the normal amendment process. The following specific options may be considered for addition to the FMP in the future:

- Designate zones in the EEZ for mooring buoys installation to protect essential fish habitat (EFH) from anchor damage and, in areas with approved mooring buoys, prohibit anchoring of fishing vessels within a radius indicated on the buoy
- Require permitted fishing vessels to post a bond to cover removal of the vessel and any damage to a reef in the event of a grounding
- Require fishing vessels to carry remote electronic vessel monitoring systems (VMS) as part of an effective monitoring and enforcement system for state, territorial and federal agencies; this requirement could be applied to coral reef fisheries in specific geographical areas

Proposed Non-Regulatory Actions

The following actions will complement the above measures and are essential to achieving comprehensive, integrated management of coral reef ecosystems:

- Establish formal process for coordination among plan teams to

identify and address impacts to coral reef ecosystems by existing FMP fisheries

- Facilitate consistent state and territorial level management of coral reef resources
- Create social, economic and political incentives for sustainable use and disincentives for unsustainable use of coral reef resources
- Conduct education, public outreach and coral reef management diplomacy

Sustainable Fisheries Act (SFA) Determinations

The FMP addresses requirements of the SFA, that amended the Magnuson-Stevens Act under which authority the Council operates, to include discussions on commercial, recreational and charter fishing sectors; impacts on fishing communities; overfishing; and bycatch. How the Coral Reef Ecosystem FMP addresses the key requirements is summarized below.

1. *Fishing Sectors*:

Commercial, recreational and charter fishing sectors that participate in the coral reef fishery are described in the FMP by area (Hawaii, Guam, NMI, American Samoa and Pacific Remote Islands). Trends in landings are quantified to the extent practicable for the managed fishery resource by the commercial, recreational and charter fishing sectors. Data reporting systems are discussed for each area. The Council recommends that no exception be granted for subsistence fishers from permitting and reporting, as truly subsistence fishers generally do not fish in federal waters.

2. *Communities*:

Considering the importance of fishery resources to all the island groups and taking into account the distinctive geographic, demographic and cultural attributes, the islands of American Samoa, NMI and Guam are each characterize as fishing communities. Each inhabited island in the state of Hawaii Kauai, Niihau, Oahu, Maui, Molokai, Lanai and Hawaii is also considered as a distinct fishing community. Defining the boundaries of the fishing communities broadly helps ensure that the analysis of impacts considers the economic and social impacts on all segments of island populations that are substantially dependent on or engaged in, coral reef fishing-related activities.

3. *Overfishing*:

As required, the Council endorses criteria for overfishing and procedures for maximum sustainable yield (MSY) determination as follows:

- For management unit species (MUS) with a good history of harvest, use existing catch data and other available information to make best estimates of MSY
- When insufficient catch data exist from EEZ sources, extrapolate data from other similar areas where fishing has occurred
- When no information exists, estimate MSY by proxy, state assumptions clearly and/or explain why estimates cannot be made

4. *Bycatch*:

Establishment of a standardized reporting methodology to assess the amount and type of bycatch in the fishery and minimize it and its mortality are required.

Coral reef resources are taken by methods that are mostly highly selective. The ability of fishers to target particular species with less selective gear, such as gill nets, depends on skill levels and methods of deployment. Even with indiscriminate gear, virtually everything caught can be sold or used for personal consumption, so there are few discards, with the exception of those that cause ciguatera poisoning, such as barracuda, many species of groupers, eels and some of the larger snappers and amberjacks. The ciguatera problem cannot be reduced through this FMP. The FMP minimizes other sources of bycatch by allowing only non-destructive and highly selective fishing gear to be used in EEZ fisheries for coral reef resources. Destructive fishing methods (e.g., blasting, poisoning, all-terrain trawling), which produce significant bycatch, are prohibited. The FMP also establishes permit processes to allow harvesting under specific conditions. Reporting of bycatch will be required.

Essential Fish Habitat and Habitat Areas of Particular Concern

Because there are large gaps in scientific knowledge about the life histories and habitat requirements of many coral reef ecosystem species, the Council adopted a precautionary approach in designating essential fish habitat (EFH) for MUS covered by the FMP. MUS have been linked to specific habitat composites (i.e., sand, live coral, seagrass beds, mangrove, etc.) for each life history stage, consistent with the depth of the ecosystem to 50 fathoms and to the limit of the EEZ.

Habitat areas of particular concern (HAPCs) meet one or more of the following criteria: 1) ecological function provided by the habitat is important; 2) habitat is sensitive to human-induced environmental degradation; 3) development activities are, or will be, stressing the habitat type; or 4) the habitat type is rare. A great deal of life history work needs to be done in order to adequately identify HAPCs.

SCHEDULE

Timetable for Completion

- Dec-Jan: Preliminary Draft FMP/DEIS public comment period and public meetings held on

all islands

- Jan-Feb: Advisory bodies meet to review comments and make recommendations to the Council
- Feb-Mar: Council meets and considers recommendations and comments
  April-May: Draft FMP/DEIS made available for public comment during 45 day review period.
- June: Council meets and takes final action on plan
- Oct-Nov: Rules become effective

Comments from the public and government agencies are currently sought on the above proposed management program through 24 January. For additional information contact the Council Office at tel: 808-522-8220 and fax: 808-522-8226.

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Table 1. Coral reef area (<50 fm deep) in waters 0-3 nmi and 3-200 nmi from shore in each location of the Western Pacific Region.

	0-3 nmi	3-200 nmi	Total Area
American Samoa	271	25	296
Guam	69	110	179
Hawaii			
Main Hawaiian Islands	1,655	880	2,535
Northwest Hawaiian Islands	2,430	9,124	11,554
Northern Marianas	45	534	579
Other U.S. Pacific Islands	620	89	709
TOTAL	5,090	10,762	15,852

Table 2: Management Unit Species (MUS) - Harvested Coral Reef Taxa

Acanthuridae	Yelloweyed surgeonfish (*Ctenochaetus strigosus*) Orangespot surgeonfish (*Acanthurus olivaceus*) Yellowfin surgeonfish (*Acanthurus xanthopterus*) Convict tang (*Acanthurus triostegus*) Eye striped surgeon fish (*Acanthurus dussumieri*) Unicornfish (*Naso spp.*)
Balistidae	Triggerfish (*Xyrichthys pavo*)
Carcharhinidae	Gray reef shark (*Carcharhinus amblyrhynchos*)
Holocentridae	Soldierfish (*Myripristis spp.*)
Kuhliidae	Hawaiian flag-tail (*Kuhlia sandvicensis*)
Kyphosidae	Rudderfish (*Kyphosus spp*)
Labridae	Napoleon wrasse (*Cheilinus undulatus*) Saddleback hogfish (*Bodianus bilunulatus*) (*Xyricthys* spp.)
Lethrinidae	Smalltooth emperor (*Lethrinus microdon*)
Mullidae	Goatfish (*Mulloidichthys spp.*) Striped mullet *(Mugil cephalus*) Yellowfin goatfish (*Mulloidichthys vanicolensis*) Goatfish (*Parupeneus porphyreus*) -Ku-mu Multi-barred goatfish (*Parupeneus multifaciatus*)
Octopodidae	Octopus (*Octopus cyanea, O. ornatus*)
Polynemidae	Threadfin (*Polydactylus sexfilis*) Moi
Priacanthidae	Bigeye (*Priacanthus spp.*)
Scaridae	Bumphead parrotfish (*Bolbometopon muricatum*) Parrotfishes (*Scarid spp.*)
Serranidae	Groupers/Sea Bass (*Cephalopholis spp.*) Groupers/Sea Bass (*Epinephelus spp.*)
Sphyraenidae	Barracuda (*Sphyraena helleri*)

Aquarium Taxa/Species	Yellow tang (*Zebrasoma flavescens*) Yellow-eyed surgeon fish (*Ctenochaetus strigosus*) Achilles tang (*Acanthurus achilles*)

	Morrish idol (*Zanclus cornutus*) Masked angel (*Genicanthus personatus*) Angelfish (*Centropyge shepardi* and *C. flavissimus*) Dragon eel (*Enchelycore pardalis*) Flame hawkfish (*Neocirrhitus armatus*) Butterflyfish (*Chaetodon auriga, C. lunula, C. melannotus* and *C. ephippium*) Damselfish (*Chromis viridis, Dascyllus aruanus* and *D. trimaculatus*) Turkeyfish (*Pterois sphex*) Featherduster worm (*Sabellidae*)