

Draft Coral Reef Ecosystem FMP: Summary of Council s Preferred Alternative

April 2000

MOTIVATION

The growing potential for unmanaged exploitation of coral reef resources in the US Western Pacific Region has compelled the Council to proactively prepare and oversee implementation of the Coral Reef Ecosystem Fishery Management Plan (FMP). Although coral reef resources in the EEZ have not been exploited on a large scale to date, a long-term economic benefit will be realized if these resources are protected and harvested on a sustainable basis.

The overall goal of the FMP is to effectively manage coral reef resources 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, such as 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) (Table 3).

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 or for harvested taxa in marine protected areas no permits for commercial take of wild live rock and live hard corals existing FMP fisheries follow measures in each respective plan for permit and reporting.

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 (includes trolling)	rod and reel	spear
slurp gun	hand net/dip net	barrier net (aquarium)
surround/purse net (for akule and aku	u bait fishing only)	hoop net (for Kona crab)

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 existing FMP fisheries follow allowable gear/methods listed in each respective plan.

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 FMP fisheries follow measures in each respective plan):

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 include all EEZ substrate from the shoreline to a depth of 50 fm; 0-10 fm around all islands and 0-50 fm around Laysan, Midway and French Frigate Shoals zoned for no-take (existing FMP fisheries also prohibited in these areas); 0-50 fm around other islands zoned for limited take, by special permit only
- > Recommend that the State of Hawaii and the USFWS adopt consistent regulations to close all fishing 0-10 fm in the NWHI and 0-50 fm around French Frigate Shoals, Laysan and Midway
- > Catch and release fishing around Midway is allowed for sport and charter activities
- > One grandfather is allowed, a Hoomalu Zone vessel that has a history of catch at
- French Frigate Shoals and is incapable of moving further up the chain due to vessel size. > Ban anchoring in no-take MPAs in areas of particular concern (to be identified)

Guams Southern Banks: MPA prohibits anchoring by fishing vessels >50 ft only on these banks.

4. Framework Actions:

A framework regulatory process will allow management adjustments to be made rapidly. The following options may be considered for addition to the FMP in the future:

С

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

- C Require insurance for permitted fishing vessels to cover cost of vessel removal (and possibly mitigation) in the event of a grounding
- C Require fishing vessels to carry remote electronic vessel monitoring systems (VMS) for operation in MPAs, if funded by NMFS, 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:

- C Establish formal process for coordination among plan teams to identify and address impacts to coral reef ecosystems by existing FMP fisheries
- **C** Facilitate consistent state and territorial level management of coral reef resources
- C Create social, economic and political incentives for sustainable use and disincentives for unsustainable use of coral reef resources
- C Conduct education, public outreach and coral reef management diplomacy.

Sustainable Fisheries Act (SFA) Determinations

The draft Coral Reef Ecosystem FMP addresses the key requirements of the SFA, which amended the Magnuson-Stevens Act under which the Council operates, as 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 fishermen from permitting and reporting, as truly subsistence fishermen 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 territories/commonwealth of American Samoa, Guam and NMI 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:

- C 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
- C When insufficient catch data exist from EEZ sources, extrapolate data from other similar areas where fishing has occurred
- C When no information exists, estimate MSY by proxy, state assumptions clearly and/or explain why estimates cannot be made

4. *Bycatch*:

Coral reef resources are taken mostly by methods that are highly selective. The ability of fishermen 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 for all catch.

5. 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.

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U-3 nmi	3-200 nmi	Total Area
271	25	296
69	110	179
1 655	000	9 595
2,430	9,124	2,555 11,554
45	534	579
620	89	709
5,090	10,762	15,852
	nmi 271 69 1,655 2,430 45 620 5,090	nmi nmi 271 25 69 110 1,655 880 2,430 9,124 45 534 620 89 5,090 10,762

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.

Table 2. Management Unit Species (MUS) - Haivesteu Cotal Reel Tax

Acanthuridae	Yelloweyed surgeonfish (<i>Ctenochaetus strigosus</i>) Orangespot surgeonfish (<i>Acanthurus olivaceus</i>) Yellowfin surgeonfish (<i>Acanthurus xanthopterus</i>) Convict tang (<i>Acanthurus triostegus</i>) Eye striped surgeon fish (<i>Acanthurus dussumieri</i>) Unicornfish (<i>Naso spp</i> .)
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 (<i>Cheilinus undulatus</i>) Saddleback hogfish (<i>Bodianus bilunulatus</i>) (<i>Xyricthys</i> spp.)
Lethrinidae	Smalltooth emperor (Lethrinus microdon)
Mullidae	Goatfish (<i>Mulloidichthys spp.</i>) Striped mullet (<i>Mugil cephalus</i>) Yellowfin goatfish (<i>Mulloidichthys vanicolensis</i>) Goatfish (<i>Parupeneus porphyreus</i>) -Ku-mu Multi-barred goatfish (<i>Parupeneus multifaciatus</i>)
Octopodidae	Octopus (Octopus cyanea, O. ornatus)
Polynemidae	Threadfin (Polydactylus sexfilis) Moi
Priacanthidae	Bigeye (Priacanthus spp.)
Scaridae	Bumphead parrotfish (<i>Bolbometopon muricatum</i>) Parrotfishes (<i>Scarid spp.</i>)
Serranidae	Groupers/Sea Bass (<i>Cephalopholis spp.</i>) Groupers/Sea Bass (<i>Epinephelus spp.</i>)
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)

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Other Labridae spp. (wrasses)	Ephippidae (batfish)
Carcharhinidae*, Sphyrnidae*, Triaenodon obesus (sharks)	Monodactylidae (mono)
Dasyatididae, Myliobatidae, Mobulidae (rays)	Haemulidae (sweetlips)
Other Serranidae spp.* (groupers)	Echineididae (remoras)
Carangidae* (jacks/trevallies), except those managed under BFMP	Malacanthidae (tilefish)
Decapterus/Selar spp. (scads)	Acanthoclinidae (spiny basslets)
Other Holocentridae spp. (soldierfish/squirrelfish)	Pseudochromidae (dottybacks)
Other Mullidae spp. (goatfish)	Plesiopidae (prettyfins)
Other Acanthuridae spp. (surgeonfish/unicornfish)	Tetrarogidae (waspfish)
Other Lethrinidae spp. (emperors), except those managed under BFMP *	Caracanthidae (coral crouchers)
Muraenidae, Chlopsidae, Congridae, Moringuidae, Ophichthidae (eels)	Grammistidae (soapfish)
Apogonidae (cardinalfish)	Aulostomus chinensis (trumpetfish)
Other Zanclidae spp. (moorish idols)	Fistularia commersoni (coronetfish)
Other Chaetodontidae spp. (butterflyfish)	Anomalopidae (flashlightfish)
Other Pomacanthidae spp. (angelfish)	Clupeidae (herrings)
Other Pomacentridae spp. (damselfish)	Engraulidae (anchovies)
Scorpaenidae (scorpionfish)	Gobiidae (gobies)
Blenniidae (blennies)	Lutjanids, except those managed under BFMP*
Other Sphyraenidae spp. (barracudas)	Other Ballistidae/Monocanthidae spp.
Pinguipedidae (sandperches)	Siganidae
Gymnosarda unicolor*	Other Kyphosidae spp.
Bothidae/Soleidae/Pleurnectidae (flounder/sole)	Caesionidae
Ostraciidae (trunkfish)	Cirrhitidae
Tetradontidae/Diodontidae (puffer/porcupinefish)	Antennariidae (frogfishes)

	Syngnathidae (pipefishes/seahorses)
Stony corals	Echinoderms (e.g., sea cucumbers, sea urchins)
Heliopora (blue)	Mollusca
Tubiphora (organpipe)	Sea Snails (gastropods)
Azooxanthellates (non-reefbuilders)	Trochus spp.
Fungiidae (mushroom corals)	Opistobranchs (sea slugs)
Sm/Lg Polyped Corals (endemic spp.)	Pinctada margaritifera (black lipped pearl oyster)
Millepora (firecorals)	Tridacnidae
Soft corals and Gorgonians	Other Bivalves
Anemones (non-epifaunal)	Cephalopods
Zooanthids	Crustaceans*
Sponges (non-epifaunal)	Lobsters
Hydrozoans	Shrimp/Mantis
Stylasteridae (lace corals)	Crabs
Solanderidae (hydroid fans)	Annelids
Bryozoans	Algae
Tunicates (solitary/colonial)	Live rock

*Some MUS in the FMP are included under the Council s other four FMPs, under which their MSY/OY, EFH and other fishery characteristics are identified. For these MUS, fishery-level effects and management should be the primary responsibility of the other FMP processes, while ecosystem effects should be the primary responsibility of the coral reef ecosystem FMP process. However, all Plan Teams should review all recommendations concerning these species for consistency. Where inconsistencies occur, an inter-Plan Team effort should work to modify recommendations for consistency.