Management Structure and Coordination

The Mariana Archipelago Fishery Ecosystem Plan (FEP) fosters increased collaboration with domestic and international management bodies, government and non-governmental organizations, communities and the public.

FEP Advisory Panel provides input on fishery management issues and planning efforts and the content and likely effect of management plans, amendments and management measures. It includes16 members representing commercial, recreational and subsistence fisheries and ecosystems from Guam and CNMI.

Archipelagic FEP Plan Team oversees the ongoing development and implentation of the four insular FEPs for the Western Pacific Region. It monitors fisheries performance and fish stocks managed under these FEPs.

Science and Statistical Committee (SSC) identifies scientific resources required to develop the FEPs and amendments, recomends resources for the the Plan Teams, provides multidisciplinary review of management plans and amendments, evaluates scientific information, and advises the Council on the composition of the Plan Teams.

Mariana FEP Standing Committee reviews all relevant information and data including recommendations from the Advisory Panel, Plan Team and SSC and provides recommendations to the Council.

Mariana Archipelago Regional Ecosystem Advisory Committee includes Council members and representatives from federal, state and local government agencies; businesses; and non-governmental organizatons with responsibility and interest in land-based and non-fshing activities that potentially affect the area's marine environment.

Indigenous Programs of the Council address the economic and social impacts of colonization, militarization and immigration on the people in the Council's area of responsibility and authority. It includes the Subsistence and Indigenous Advisory Panel, Western Pacific Community Development Program and Western Pacific Community Demonstration Project Program.

International Management and Research through development and implementation of agreements regarding marine resources.

To become involved, contact the Council at (808) 522-8220 or at *info.wpcouncil@noaa.gov*; in Guam, John Calvo at (671) 649-3150 or 688-6400; and in the CNMI, Jack Ogumoro at (670) 322-9830 or 287-9482.

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Objectives of the Mariana Archipelago FEP

1. Maintain biologically diverse and productive marine ecosystems and foster the long-term use of marine resources in an ecologically and culturally sensitive manner through the use of a science-based ecosystem appraoch to resource management.
2. Provide flexible and adaptive management systems that can rapidly address new scientific information and changes in environmental conditions or human use patterns.
3. Improve public and government awareness and understanding of the marine environment in order to reduce unsustainable human impacts and foster support for responsible stewardship.
4. Encourage and provide for sustained and substantive participation of local communities in the exploration, development, conservation and management of marine resoruces.
5. Minimize fishery bycatch and waste to the extent practical.
6. Manage and co-manage protected species, protected habitats and protected areas.
7. Promote safety of human life at sea.
8. Encourage and support appropriate compliance and enforcement with all applicable local and federal fishery regulations.
9. Increase collaboration with domestic and foreign regional fishery management and other governmental and non-govermental organizations, communities and the public at large to successfully manage marine ecosystems.
10. Improve the quantity and quality of available information to support marine ecosystem management.

The Council's 2006 poster contest raised awareness of the Mariana Archipelago FEP. This entry is by So Jung Song, Saipan community School, CNMI.

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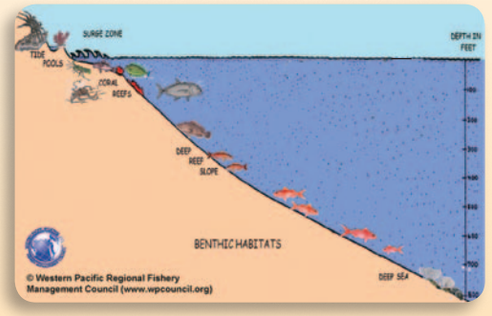
Mariana Archipelago Fishery Ecosystem Plan

The Mariana Archipelago Fishery Ecosystem Plan (FEP) contains the federal fisheries management measures for Guam and the Commonwealth of the Northern Mariana Islands that were initially implemented through the species-based Bottomfish, Crustaceans, Precious Corals and Coral Reef Ecosystem Fishery Management Plans for the Western Pacific Region.

These measures manage resources and habitats near the ocean floor that are associated with US exclusive economic zone (EEZ) waters surrounding Guam (3 to 200 miles offshore) and the Northern Mariana Islands (0 to 200 miles offshore).

By being place-based rather than species-based, the Mariana Archipelago FEP provides the framework to pursue an ecosystem approach to fisheries management. The ecosystem approach is adaptive and geographically specific. It accounts for ecosystem knowledge and uncertainties. It considers mulitple external influences. It strives to balance diverse social objectives.

The Western Pacific Regional Fishery Management Council approved the Mariana Archipelago FEP in December 2005. Council staff and the National Marine Fisheries Service's Pacific Islands Regional Office are finalizing the document for approval by the Secretary of Commerce.



Ecosystem – A geographically specified system of organisms (including humans) and their environment and the processes that control its dynamics.

Mariana Archipelago FEP Managed Species

BOTTOMFISH

Snapper: Lehi, marrobw *(Aphareus rutilans)*; Gogunafon, Aiwe *(Aprion virescens)*; Buninas agaga, Falaghal moroobw *(Etelis carbunculus)*; Buninas, Taighulupegh *(E. coruscans)*; Funai, Saas *(Lutjanus kasmira)*; Buninas, Falaghal-maroobw *(Pristipomoides auricilla, P. filamentosus, P. flavipinnis)*; Buninas rayao amiriyu, Falaghal-maroobw *(P. zonatus)*; Pink snapper *(P. seiboldii)*

Grouper: Gadao, Meteil *(Epinephelus fasciatus)*; Bueli, Bwele *(Variola louti)*

Trevally, Jack: Tarakitu, Etam *(Caranx ignobolis)*; Tarakiton attelong, Orong *(C. lugubris)*

Redgill emperor: Mafuti, Atigh *(Lethrinus rubrioperculatus)*

Amberjack: Tarakiton tadong, Meseyugh *(Seriola dumerili)*

CRUSTACEANS

Spiny lobster: Mahongang *(Panulirus marginatus and P. penicillatus)*

Slipper lobster: *(Family Scyllaridae)* Kona crab: *(Ranina ranina)*

Deepwater shrimp: *Heterrocarpus ensifer, H. laevigatus, H. longirostris*

PRECIOUS CORAL

Pink coral: *(Corallium secundum, C. regale, C. laauense)*

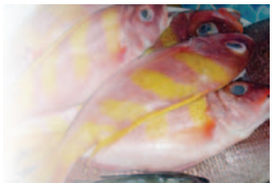
Gold coral: *(Gerardia spp., Narella spp., Calyptrophora spp.)*

Bamboo coral: *(Lepidisis olpa, Acanella spp.)*

Black coral: *(Antipathes dichotoma, A. grandis, A. ulex)*

CORAL REEF ECOSYSTEM – *Currently Harvested Taxa*

Surgeonfish: Hugupao dangulo, Mowagh *(Acanthurus xanthopterus)*; Kichu, Limell *(A. triostegus)*; Hiyok, Filaang *(A. lineatus)*; 11 other *Acanthurus* spp.; Tataga, Igh-falafal *(Masp imocprmis)*; Hangon, Bwulaalay *(Naso lituratus)*; 8 other Naso spp.; 2 *Ctenochaetus* spp.; *Zebrasoma flavescens*



Triggerfish: *Balistoides viridescnes, B. conspicillum, Balistapus undulatus, Melichthys vidua, M. niger, Pseudobalistes fuscus, Rhinecanthus aculeatus, Sufflamen fraenatum*

Scad: Atulai, Peti *(Selar crumenophthamus)*; *Decapterus macarellus*

Shark: 4 *Carcharhinus* spp.; *Triaenodon obesus*

Squirrelfish: Saksak, Mweel *(Myripristis berndti)*; 8 other *Myripristis* spp.; 9 *Sargocentron* spp.; *Neoniphon* spp.

Flagtail: *Kuhlia mugil*

Rudderfish: Guili, Schpwul *(Kyphosus cinerascens)*; Guilen puengi, Reel *(K. vaigiense); K. biggibus*

Wrasse: Tangison, Maam *(Cheilinus cholorourus)*; Lalacha mamate, Porou *(C. trilobatus)*; 2 other *Cheilinus* spp.; 2 *Oxychelinus* spp.; 2 *Xyrichtys* spp.; 2 *Hemigymnus* spp.; 4 *Halicheres* spp.; 3 *Thalassoma* spp.; *Cheilio inermis; Hologynmosus doliatus; Novaculichthys taeniourus*

Goatfish: Satmoneti, Wichigh *(Mulloidichthys vanicolensis, M. flaviolineatus)*; Satmonetiyo, Failighi *(Parupeneus barberinus)*; Satmoneti acho, Sungoongo *(P. bifasciatus)*; other *Mulloidichthys* spp.; other *Parupeneus* spp.; *Upeneus arge*

Mullet: *Mugil cephalus; Moolgarda engeli; Neomyxus leuciscus; Crenimugil crenilabis*

Eel and Octopus: 3 *Gymnothorax* spp. and 2 *Octopus* spp.

Threadfin: *Polydactylus sexfilils*

Bigeye: *Heteropriacanthus cruentatus, Priacanthus hamrur*

Parrotfish: Atuhong, Roow *(Bolbometopon muricatum)*; Palakse, Laggua *(Scarus spp.)*; Gualafi, Oscha *(Hipposcarus longiceps)*; Calotomus carolinus

Dogtooth tuna: White tuna, Ayul *(Gymnosarda unicolor)*

Rabbitfish: Manahok, Ilegh *(Siganus aregentus)*; Sesyon, Palawa *(Siganus spinus)*; 4 other *Siganus* spp.

Barracuda: 2 *Sphyraena* spp.

Green snail: *Turbo* spp.

CORAL REEF ECOSYSTEM – *Potentially Harvested Taxa*

All other marine plants, invertebrates and fish that spend the majority of their non-pelagic (post settlement) life within waters less than or equal to 50 fms in depth that are not listed as currently harvested coral reef taxa or bottomfish management unit species.

Federal Regulations for Mariana Archipelago FEP Managed Species

BOTTOMFISH

- **All vessels:** a) ban on use of bottom trawls and bottom set gillnets; and b) ban on possession or use of any poisions, explosives or intoxicating substances to harvest bottomfish or seamount groundfish
- **Vessels >50 feet in length landing in Guam:** a) federal permit and logbook; b) on-board observer when directed by the National Marine Fisheries Service; and c) ban on anchoring on Guam's Southern Banks except for a documented emergency or vessel malfunction
- **Vessels landing in CNMI (Council recommendation to be approved by Secretary of Commerce):** a) federal permit and logbook; and b) for vessels >40 feet in length, a ban on fishing 0 to 50 nautical miles offshore CNMI southern islands and 0 to 10 nautical miles offshore the northern island of Alamagan

CRUSTACEANS

- Federal permit and logbook
- Ban on fishing for, taking or retaining lobster with explosives, posions or electrical shocking devices
- Notification before port landing and before offloading
- Observer coverage when requested by National Marine Fisheries Service

PRECIOUS CORALS

- One permit for Guam and one for CNMI (same person cannot hold both)
- Use of only selective gear that can discriminate or differentiate between type, size, quality or characteristics of living or dead corals
- Quota of 1,000 kg each for CNMI and Guam for all species combined (except black coral)
- Minimum height 10 inches for live pink coral
- Minimum stem diameter 1 inch or minimum height 48 inches for live black coral
- Moratorium on gold coral 2008 to 2013

CORAL REEF ECOSYSTEM

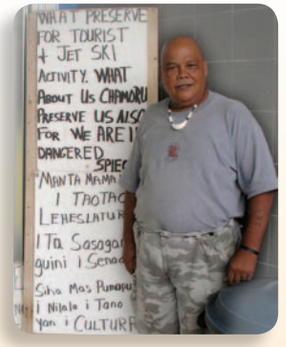
- Special permit, reporting and pre-landing notification for any directed fishery on potentially harvested coral reef taxa
- Allowable gear types include hand-harvest, spear, slurp gun, hand/dip net, hoop net for Kona crab, throw net, barrier net, surround/purse net that is attended at all times, hook-and-line, crab and fish traps with vessel ID number affixed or remote operating vehicle/submersible. Special permit, reporting and pre-landing notification requirements apply for the use of other gear types to harvest coral reef ecosystem taxa
- Ban on possession and use of poisons, explosives or intoxicating substances to take coral reef ecosystem managed species
- Ban on harvest of live rock and living corals except for indigenous people for traditional uses and aquaculture operations for seed stock under special permit, reporting and pre-landing notification requirements
- Ban on anchoring on Guam's Southern Banks except for a documented emergency or vessel malfunction by any vessel >50 feet in length

Next Steps

Successful ecosystem management will require an increased understanding of a range of social and scientific issues:

- Appropriate management objectives
- Biological & trophic relationships
- Ecosystem indicators & models
- Ecological effects of non-fishing activities on the marine environment
- Cultural and social components of the environment
- Involvement in management, especially by people who rely on the environment for their livelihood, social relations and cultural identity

Future fishery management actions will use this information and, through adaptive management, advance the implementation of ecosystem science to manage the fisheries in the Mariana Archipelago.



A key impact to the natural and cultural environment of the Mariana Archipelago is the relocation of about 8,000 military personnel and their families (40,000 total) to Guam from Okinawa along with 12,000 foreign construction workers. Increased military training will likely occur in the CNMI as part of the military realignment.

Many nearshore reefs on Guam have been degraded by natural and human impacts, especially sedimentation, tourism and overharvesting. The reefs on the offshore banks appear to be generally in good condition because of their isolation. Coral reef fisheries in CNMI are believed to be generally in good condition.

Non-fishing Impacts on Marine Fisheries and Resources

HUMAN IMPACTS

- Coastal construction
- Soil erosion & sedimentation
- Industrial pollution
- Hazardous waste

photo courtesy of Guam Forestry and Soil Resources Division

- Nutrient loading (sewage/ eutrophication)
- Tourism & recreation impacts & overuse
- Urbanization
- Vessel groundings, anchoring & oil spills
- Marine debris
- Aquatic invasive species
- Security training

NON-HUMAN IMPACTS

- Weather cycles
- Hurricanes
- Flooding
- Environmental changes