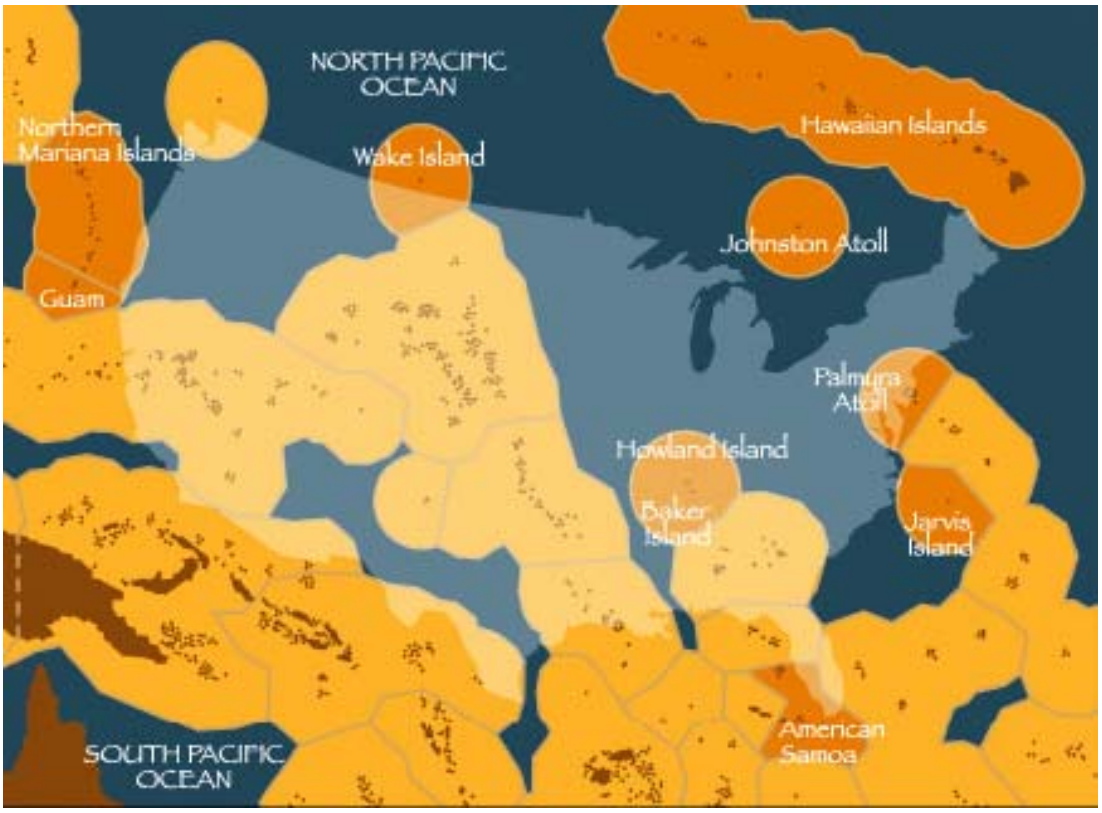
WESTERN PACIFIC REGIONAL FISHERY MANAGEMENT COUNCIL

# New Permit and Reporting Requirements Following the Inclusion of Fisheries under Federal Fishery Management Plans in the Western Pacific Region




## Amendment 8 to the Bottomfish and Seamount Groundfish Fisheries Management Plan
## &
## Amendment 12 to the Crustaceans Fisheries Management Plan
## &
## Amendment 6 to the Precious Corals Fisheries Management Plan

**Including an Environmental Assessment**

**May 8, 2006**

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# PROLOGUE

**…..old things are passed away;**
**behold, all things are become new…..**

**Corinthians 5:17**

**Abstract**

This document amends three fishery management plans (FMPs) of the Western Pacific Regional Fishery Management Council to include fisheries and waters around the Commonwealth of the Northern Marianas Islands (CNMI) and the Pacific Remote Island Areas (PRIA)[1]. These amendments affect United States domestic fisheries that offload or operate in Federal waters around the CNMI and the PRIA. Amendment 8 to the Bottomfish and Seamount Groundfish FMP would establish new permitting and reporting requirements for fisheries operating in the PRIA to improve the database for future decisions. Amendment 12 to the Crustaceans FMP would establish new permitting and reporting requirements for fisheries operating in the CNMI and in the PRIA, for the purpose of collecting and analyzing biological and economic information about the lobster fisheries and to improve the statistical base for conservation and management in the future. Amendment 6 to the Precious Corals FMP would establish new permitting and reporting requirements for the CNMI to encourage the acquisition and analysis of new information concerning the distribution, abundance, and ecology of precious corals.

# 1.0 Introductory material

## 1.1 Summary

This omnibus document amends three FMPs of the Western Pacific Regional Fishery Management Council to include fisheries and waters around the CNMI and the Pacific Remote Island Areas (PRIA).These amendments affect United States domestic fisheries that offload or operate in Federal waters around the CNMI and the PRIA. Amendment 8 to the Bottomfish and Seamount Groundfish FMP would establish new permitting and reporting requirements for fisheries operating in the PRIA to improve the database for future decisions. Amendment 12 to the Crustaceans FMP would establish new permitting and reporting requirements for fisheries operating in the CNMI and in the PRIA, for the purpose of collecting and analyzing biological and economic information about the lobster fisheries and to improve the statistical base for conservation and management in the future. Amendment 6 to the Precious Corals FMP would establish new permitting and reporting requirements for the CNMI to encourage the acquisition and analysis of new information concerning the distribution, abundance, and ecology of precious corals.

The western Pacific region encompasses Federal waters, i.e., the U.S. Exclusive Economic Zone (EEZ), around the Territories of Guam and American Samoa, the State of Hawaii, the CNMI and the PRIA. The inner boundary of the EEZ is the seaward limit of each of the coastal states,

[1] The western Pacific region includes Howland, Baker, Jarvis, Wake and Palmyra Islands, Johnston Atoll and Kingman Reef. Midway which is jurisdictionally designated in the PRIA, has been defined in the Code of Regulations (CFR) as a part of the Management area for each of the FMPs and is not considered in these amendments.

commonwealths, territories and possessions. The EEZ extends from this inner boundary to 200 nautical miles (nm) offshore. The specifics of these areas are discussed in section 6.1.3.2. The Council has developed and NMFS has approved and implemented five FMPs covering pelagic, crustacean, bottomfish and seamount groundfish, and precious coral fisheries. The FMP for coral reef ecosystems took effect on February 24, 2004 (69 FR 8343. Feb 24, 2004). The Federal waters surrounding the CNMI are currently not included in the Bottomfish, Crustaceans, or Precious Corals FMPs. Similarly, the Federal waters surrounding the PRIA are not included in the Bottomfish or Crustaceans FMPs. These proposed amendments would include the fisheries operating in these areas under the Council's FMPs.

Currently, the EEZ includes all waters surrounding the Northern Mariana Islands from shore out to 200 miles, hence the Federal Government has jurisdiction over ocean lands and resources within the EEZ. However, CNMI, like the governments of other states, has the authority to regulate fishing by its local fishermen, and vessels. For the purpose of fisheries conservation and management, Amendment 8 to the Bottomfish and Seamount Groundfish FMP, Amendment 12 to the Crustaceans FMP, and Amendment 6 to the Precious Corals FMP defer regulatory authority to the CNMI government in regulating its fishermen in waters 0 to 3 nm of the EEZ. These FMP amendments do not concede that CNMI has sovereignty over EEZ resources.

Vessels have been known to fish for bottomfish and crustaceans in the Federal waters surrounding the CNMI and the PRIA. While there are currently no known fisheries operating in the PRIA, and no precious corals fisheries operating in the CNMI, interest may arise in the future. In the CNMI, recent bottomfish landings from large (>50 ft) vessels account for about 60% of total commercial bottomfish landings. These larger vessels can exploit the fishing grounds of the relatively distant Northern Islands, where smaller, local vessels generally do not fish. Because data is collected voluntarily from these larger non-local bottomfish vessels, the future reliability of data collection cannot be assured. Similarly, an offshore deep-water shrimp fishery operated in the CNMI for many months before knowledge of the fishery or reporting of the catch occurred. Commercial quality precious corals have also been landed in the Federal waters around the CNMI and industry representatives have expressed a desire to explore these new areas in order to reduce the pressure from the heavily harvested Makapu'u bed in the main Hawaiian Islands. These developments suggested to the Council that the preliminary step of including offshore waters (3 to 200 nm) around the CNMI under its management plan is necessary. This would facilitate further steps to monitor catches and, if needed at some future date, to implement other management measures.

In recent years there has also been an increase in the number of vessels using mixed gear in the PRIA. These vessels target bottomfish with handlines, troll for pelagic species, or trap for deep-water shrimp. A 2002 regulatory amendment to the Pelagics FMP (67 FR 30346, May 6, 2002) requires Federal reporting for vessels trolling for and landing pelagic management unit species (MUS) in the PRIA. Data collection for other PRIA fisheries occurs at the landing port, which to date has been exclusively in the State of Hawaii. However, Hawaii's state-required landings data do not include details on effort, bycatch, location or protected species interactions. In addition, although currently not in use, an airfield and vessel re-supply facility on Palmyra Atoll may, if a market develops, allow for catches to be shipped out by air. There is currently no mechanism to

gather fishery statistics for such landings. As in the case of the CNMI, the Council determined that the PRIA need to be included under its management plans in order to allow for the collection of fishery data and the timely implementation of further management actions should they become necessary.

The U.S. Fish and Wildlife Service (USFWS) has been given the authority to manage a number of National Wildlife Refuges (NWR) in the western Pacific region. The USFWS asserts the authority to solely manage marine resources and activities, including fishing activities within Refuge boundaries pursuant to the National Wildlife Refuge System Administration Act (NWRSAA) of 1966, as amended by the National Wildlife Refuge System Improvement Act of 1997, and other authorities (Gilman 2000). The USFWS asserts that NWRs are closed to all uses until they are specifically opened for such uses and that the USFWS is solely charged with making decisions whether to open NWRs for any use that is compatible with the refuge's primary purpose(s) and mission (Smith 2000). While commercial fishing is generally prohibited in the waters of the NWRs, specific regulations are absent. Including these areas under the FMPs, as proposed in these amendments, would add specific regulations to these areas. However, these regulations would not supersede any valid existing Federal regulations that are more restrictive to fishing operations.

Federal regulations specific to the bottomfish fishery are found in Part 665 of Title 50 in the Code of Federal Regulations (50 CFR 665). These include:

- Requiring any person who is required by state laws and regulations to maintain records of landings and sales from vessels regulated by western Pacific fisheries regulations to make those records immediately available for Federal inspection and copying upon request by an authorized officer;
- Displaying an official vessel identification number on board that is visible from enforcement vessels and aircraft;
- Prohibiting fishing for bottomfish MUS with bottom trawls or bottom set gillnets;
- Prohibiting the possession of bottom trawls or bottom set gillnets;
- Prohibiting use of poisons or explosives to harvest bottomfish MUS; and
- Allowing for at-sea observer coverage when requested to do so by the Regional Administrator.

Federal regulations in 50 CFR 665 that are specific to the crustaceans fishery and that apply to the existing Permit Area 3 (which currently consists of the EEZ waters around American Samoa and Guam) include requirements for:

- Federal permits;
- Completion and submission of Federal logbooks;

- Completion and submission of Federal sales reports;
- Submission of packing or weigh-out slips;
- Advance reporting (24-36 hr prior to arrival) of the landing port, date and time of any permitted vessel carrying spiny or slipper lobsters, as well as the location and time of offloading any spiny or slipper lobsters (6-12 hr beforehand);
- Displaying of an official vessel identification number on board that is visible from enforcement vessels and aircraft; and
- At-sea observer coverage when requested by the Regional Administrator.

Federal regulations specific to the precious coral fishery in 50 CFR 665 apply to existing exploratory areas and include requirements for:

- Federal permits;
- Completion and submission of Federal logbooks;
- Use of selective gear only (no tangle nets, dredge, *etc.*);
- Annual total harvest quota of 1000 kg (all species combined, except black coral);
- Minimum size of 10 inch height for harvest of live pink coral;
- Minimum size of 1 inch stem diameter or 48 inch height of for harvest of live black coral; and
- Displaying of an official vessel identification number on board that is visible from enforcement vessels and aircraft

Amendments 8, 12, and 6 also consider designating species targeted or potentially targeted by crustacean and bottomfish fishermen as management unit species. The importance of these species as a component of catches is known from both anecdotal evidence and extant data collection programs. Before any Federal management measures can be applied to these species they must be designated part of the management unit. After consideration, the Council decided to designate 48 bottomfish species as part of the management unit but declined to designate the three crustacean species (or species groups), that they considered. The Council determined that for the crustacean fisheries in Federal waters, the species under consideration are not sufficiently harvested to warrant designation at this time. Subsequently, in 2004, the Coral Reef Ecosystem FMP adopted all species that were not designated in an FMP at that time, including crustaceans. Similarly, bottomfish species were designated under the Coral Reef Ecosystem FMP, and therefore were not included in the preferred alternative in this document (69 FR 8343, Feb 24, 2004).

This action is designed to establish mechanisms to implement specific regulatory controls should the need arise; specific management measures (such as time and area closures, or effort and landing limits) are not included.

1.2 Table of Contents

## 1.3 List of Tables



## 1.4 List of Figures



## 1.5 List of Acronyms and Abbreviations

| | |
|---|---|
| AMSY | Average Maximum Sustainable Yield |
| BMUS | Bottomfish Management Unit Species |
| CITES | Convention on International Trade in Endangered Species of Wild Fauna and Flora |
| CFR | Code of Federal Regulations |
| CNMI | Commonwealth of the Northern Mariana Islands |
| CPD | Commercial Purchase Database |
| CPUE | Catch Per Unit Effort |
| CRE | Coral Reef Ecosystems |
| DOD | Department of Defense |
| DOI | Department of the Interior |
| DFW | Division of Fish and Wildlife |
| EA | Environmental Assessment |
| EEZ | Economic Exclusion Zone |
| EFH | Essential Fish Habitat |
| FDM | Farallon de Medinilla |
| FEIS | Final Environmental Impact Statement |
| FLPMA | Federal Land Policy and Management Act |
| fm | Fathom |
| FMP | Fishery Management Plan |
| FWS | Fish and Wildlife Service |
| HAPC | Habitat Areas of Particular Concern |
| HDAR | Hawaii Department of Aquatic Resources |
| HIR | Hawaiian Islands Reserve |
| HINWR | Hawaiian Islands National Wildlife Refuge |

| | |
|---|---|
| MHI | Main Hawaiian Islands |
| MOU | Memorandum of Understanding |
| MPA | Marine Protected Area |
| MSFCMA | Magnuson-Stevens Fishery Conservation and Management Act |
| MSY | Maximum Sustainable Yield |
| MUS | Management Unit Species |
| NAO | NOAA Administrative Order |
| NDSA | Naval Defense Sea Area |
| NEPA | National Environment Policy Act |
| NIBS | Northern Islands Bottomfish System |
| NMFS | National Marine Fisheries Service |
| nm | nautical mile |
| NWHI | Northwestern Hawaiian Islands |
| NWR | National Wildlife Refuge |
| NWRSAA | National Wildlife Refuge System Administration Act |
| PIFSC | Pacific Islands Fisheries Science Center |
| PRIA | Pacific Remote Island Areas |
| RAIOMA | Resource Assessment Investigation of the Mariana Archipelago |
| SFA | Sustainable Fisheries Act |
| SLA | Submerged Lands Act |
| SPC | South Pacific Community |
| SPR | Spawning Potential Ratio |
| TSLA | Territorial Submerged Lands Act |
| WPacFIN | Western Pacific Fishery Information Network |

| | |
|---|---|
| WPRFMC | Western Pacific Regional Fishery Management Council |

## 1.5 Introduction

### 1.5.1 Responsible Agencies

The Council was established by the Magnuson-Stevens Fishery Conservation and Management Act to develop FMPs for fisheries operating in the United States EEZ around American Samoa, Guam, Hawaii, the Commonwealth of the Northern Mariana Islands and the United States possessions in the western Pacific region. Once an FMP is approved by the Secretary of Commerce, it is implemented through Federal regulations, which are enforced by the National Marine Fisheries Service and the United States Coast Guard, in cooperation with state, territorial and commonwealth agencies. For further information, contact:

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### 1.5.2 Public Review Process and Schedule

The Council first addressed establishing new permitting and reporting requirements for the CNMI and the PRIA at the 93rd Council Meeting in August 1997 by requesting Council staff to prepare a background document containing a range of alternatives.

Public scoping hearings were held in Guam, CNMI, American Samoa and Hawaii between July 13 and August 31, 1999 to discuss including the Federal waters around CNMI and the PRIA as part of the management area for the Bottomfish FMP. Comments were also requested for the addition of new management unit species for the Bottomfish FMP. Further public scoping hearings were held in Guam, CNMI, American Samoa and Hawaii between December 20, 1999 and January 13, 2000 to discuss including the Federal waters around CNMI and the PRIA as part of the management area for the Bottomfish and Crustaceans FMPs. Comments were also requested for the addition of new management unit species for the Bottomfish and Crustaceans FMPs. A public hearing was held in the CNMI on February 16, 2000 to discuss including the domestic fisheries which offload or operate in Federal waters around CNMI in the Precious Coral and Bottomfish FMPs.

### 1.5.3 List of Preparers

This document was prepared by (in alphabetical order):

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## 2.0 Purpose and Need for Action

The Federal waters around the CNMI are currently not included in the Bottomfish and Seamount Groundfish, Crustaceans or Precious Corals FMPs. The PRIA are distant and mostly uninhabited islands in the central and western Pacific Ocean comprising Palmyra and Johnston Atolls, Kingman Reef, Jarvis Island, Baker Island, Howland Island, Wake Island, and Midway Atoll. With the exception of Midway Atoll, the Federal waters around the PRIA are also not included in the Bottomfish FMP or the Crustaceans FMP. These omissions are due, in the case of the CNMI, to jurisdictional issues that led the CNMI to stay out of the Council process until recently. The PRIA were not originally included in the FMPs, primarily because none of these fisheries were prosecuted there until recently. Since the CNMI and PRIA are not included in these FMPs, Federal management of the fisheries, including data collection, is limited for these areas. In recent years, development of small fisheries in these areas may now require Federal fishery management measures. The Federal waters of the PRIA begin at the shoreline and extend offshore 200 nm. Once the Federal waters of the PRIA are included under the FMPs, the FMP regulations would apply to the entire area. The Federal waters around CNMI also include all waters from the shoreline to 200 nm. However, although the FMP would encompass the entire EEZ, these amendments would actively manage the offshore area between 3 and 200 nm from shore. The inshore area, those waters between 0 and 3 nm from shore, would be deferred to local authorities. These proposed amendments would primarily lay the groundwork for future Federal fishery management actions in CNMI and PRIA Federal waters. Specific management measures (such as time or area closures, or effort or landing limits) are not included in this action, as it was designated to establish mechanisms to implement specific regulatory controls should the need arise. However, there is the potential for some fishery participants to be affected by the imposition of Federal regulations that would come into place as areas are included in each FMP.

A second issue addressed in these amendments is the designation of additional management unit species (MUS) under the Bottomfish FMP and the Crustaceans FMP. Description and designation as MUS is a prerequisite to any Federal regulation applied to a given species. In the case of bottomfish, 48 additional species, caught primarily in Guam, CNMI, and American Samoa, are proposed for designation. These species are currently being caught commercially, and in order to manage emerging fisheries in Federal waters their designation as MUS is necessary. The Council also considered designating three crustacean species (or species groups) that may become the target of commercial fisheries in Federal waters. These are the deepwater shrimp (*Heterocarpus laevigatus*), all *Panulirus* spiny lobster species, the red crab (*Chaceaon granulatus*), and other *Chaceon* crab species. The Council ultimately rejected MUS designation for these crustacean groups due to the low probability of any substantial fisheries emerging to harvest these species.

## 3.0 Management Objectives

The following objectives of the Council's FMPs are relevant to the proposed management measures:

- To improve the database for future bottomfish management decisions through data reporting requirements and cooperative Federal, State, Territory data collection programs (Bottomfish FMP);

- To collect and analyze biological and economic information about lobster fisheries and improve the statistical base for conservation and management in the future (Crustaceans FMP); and

- To encourage the acquisition and analysis of new information concerning the distribution, abundance and ecology of precious corals (Precious Corals FMP).

In addition, the Magnuson-Stevens Fishery Conservation and Management Act require that any FMP that is prepared by any Council, or by the Secretary, with respect to any fishery, shall:

- Specify the pertinent data which shall be submitted to the Secretary with respect to commercial, recreational, and charter fishing in the fishery, including, but not limited to, information regarding the type and quantity of fishing gear used, catch by species in numbers of fish or weight thereof, areas in which fishing was engaged in, time of fishing, number of hauls, and the estimated processing capacity of, and the actual processing capacity utilized by, United States fish processors;

- Establish a standardized reporting methodology to assess the amount and type of bycatch occurring in the fishery, and include conservation and management measures that, to the extent practicable and in the following priority-- (A) minimize bycatch; and (B) minimize the mortality of bycatch which cannot be avoided;

- Include a description of the commercial, recreational, and charter fishing sectors which participate in the fishery and, to the extent practicable, quantify trends in landings of the managed fishery resource by the commercial, recreational, and charter fishing sectors; and

- Describe and designate essential fish habitat using the best available science, whether within or outside the management area, describe current and potential adverse fishing and non-fishing impacts and propose recommendations to mitigate against these impacts.

The proposed measures would facilitate compliance with these requirements.

## 4.0 Initial Actions

At its 93rd meeting (August 19-21, 1997), the Council took initial action to include CNMI and the PRIA in Crustaceans Permit Area 3. The Council also acted to initiate the inclusion of CNMI and the PRIA as a fishery management sub-area under the Bottomfish and Seamount Groundfish FMP.

At its 94th meeting (November 12-14, 1997), the Council took final action to include within Crustaceans Permit Area 3 the waters of the EEZ off CNMI and Permit Area 4 in the PRIA. The Council also acted to initiate inclusion of CNMI in the Precious Corals FMP.

At its 95th meeting (April 14-16, 1998) the Council took initial action to add to the Bottomfish MUS list all species of the following major families of shallow-water bottomfish not already listed: Lethrinidae, Lutjanidae, Carangidae and Serranidae (with all other demersal fish species to be included as MUS in the Coral Reef Ecosystem FMP). Two of the 26 species (subsequently increased to 48 new additions in response to further information on fish species caught in CNMI) proposed for addition to the MUS list were the eight-banded grouper, *Epinephelus octofasciatus*, which is a deep-water species, and the blue gindai, *Pristipomoides argyrogrammicus*.

At its 98th meeting (December 1-3, 1998), the Council took initial action on the need for a comprehensive data amendment that would require fishermen fishing for any FMP species in PRIA EEZ waters to complete Federal logbooks.

At its 104th meeting (June 14-16, 2000) the Council took final action to include the CNMI under the Bottomfish and Seamount Groundfish, Crustaceans and Precious Corals FMPs and to define the active management area around the CNMI from 3 to 200 nm for each of these FMPs. They also recommended that the exploratory area quota for precious corals in the management area of the CNMI be set at 1,000 kg per year, as it is for other exploratory areas. The Council voted to include the PRIA under its Bottomfish and Seamount Groundfish and Crustaceans FMPs and to define the management area around the PRIA from 0 to 200 nm for each of these FMPs. The Council voted against designation of additional crustacean MUS.

At their 112th meeting, (March 19-22, 2002) the Council took final action to designate Essential Fish Habitat (EFH) for new BMUS based on the range of depth that each FMP's MUS list encompasses, as this is consistent with the method used in the Council's 1998 SFA amendment. The Council decided not to designate CNMI EFH for Precious Corals MUS at this time as no data is available regarding these species in the CNMI.

# 5.0 Management Alternatives

## 5.1 Introduction

These amendments supplement three of the Council's FMPs to include EEZ waters around the CNMI and the PRIA in these management plans. The Council and its advisory bodies considered each such change separately, as a discrete action. In order to reflect this decision process, the Council analyzed a range of alternatives for the following management issues:

1. Include domestic fisheries that offload or operate in Federal waters around CNMI in the Bottomfish and Seamount Groundfish FMP

2. Include domestic fisheries that offload or operate in Federal waters around CNMI in the Crustaceans FMP

3. Include domestic fisheries that offload or operate in Federal waters around CNMI in the Precious Corals FMP

4. Include domestic fisheries that offload or operate in Federal waters around the PRIA in the Bottomfish and Seamount Groundfish FMP

5. Include domestic fisheries that offload or operate in Federal waters around the PRIA in the Crustaceans FMP

In addition, several bottomfish and crustacean species that are currently caught commercially, or may be in future, are not designated as MUS. The Council analyzed a range of alternatives for revising bottomfish and crustacean FMPs management units. Furthermore, the Council considered alternative designation of EFH and Habitat Areas of Particular Concern (HAPC) for the species proposed for addition to the Bottomfish MUS list:

6. Addition of MUS to the Bottomfish and Seamount Groundfish FMP

7. Addition of MUS to the Crustaceans FMP

## 5.2 Management Measures Proposed for CNMI

### 5.2.1 Inclusion of CNMI in the Bottomfish and Seamount Groundfish FMP

**Alternatives:**

Alternative 1A - No Action-maintain current management status and regulations.

Alternative 2A (**Preferred Alternative) -** Include the CNMI EEZ as a management sub-area in the Bottomfish and Seamount Groundfish FMP, with FMP regulations applied to the off-shore area (3 to 200 nm), no Federal permitting or reporting requirements.

Alternative 3A - Include the CNMI EEZ as a management sub-area in the Bottomfish and Seamount Groundfish FMP, with FMP regulations applied to the off-shore area (3 to 200 nm), implement new Federal permitting and reporting requirements for large commercial vessels, targeting BMUS.

### 5.2.2 Inclusion of CNMI in the Crustaceans FMP

**Alternatives:**

Alternative 1B - No Action-maintain current management status and regulations.

Alternative 2B (**Preferred Alternative**) - Include the CNMI EEZ in Permit Area 3 under the Crustaceans FMP, with FMP regulations applied to the off-shore area (3 to 200 nm), including existing FMP Area 3 permit and reporting requirements.

### 5.2.3 Inclusion of CNMI in the Precious Corals FMP

**Alternatives:**

Alternative 1C. No Action-maintain current management status and regulations.

Alternative 2C (**Preferred Alternative**) - Include the CNMI EEZ in the Precious Coral FMP as exploratory area X-P-C, with FMP regulations applied to the off-shore area (3 to 200 nm) including existing FMP exploratory area permit and reporting and quota requirements.

## 5.3 Management Measures Proposed for the PRIA

### 5.3.1 Inclusion of the PRIA in the Bottomfish and Seamount Groundfish FMP

**Alternatives**:

Alternative 1D - No Action-maintain current management status and regulations.

Alternative 2D - Include the PRIA EEZ as a management sub-area in the Bottomfish and Seamount Groundfish FMP, no FMP permitting or reporting requirements.

Alternative 3D (**Preferred Alternative**) - Include the PRIA EEZ as a management sub-area in the Bottomfish and Seamount Groundfish FMP, implement new Federal permitting and reporting requirements for all vessels targeting BMUS.

### 5.3.2 Inclusion of the PRIA in the Crustaceans FMP

**Alternatives:**

Alternative 1E - No Action-maintain current management status and regulations.

Alternative 2E - Include the PRIA EEZ in existing Permit Area 3 under the Crustaceans FMP including existing Federal Area 3 permitting and reporting requirements.

Alternative 3E (**Preferred Alternative**) - Include the PRIA EEZ in new Permit area 4 under the Crustaceans FMP including existing FMP Area 3 permitting and reporting requirements.

**Table 1.** Permitting and Reporting Requirements under the Preferred Alternatives

| **AREA/FMP** | **New permit requirement?** | **New reporting requirement?** |
|---|---|---|
| CNMI/bottomfish | No. Continue to follow existing DFW requirement | No. Continue to follow existing DFW requirement |
| CNMI/crustaceans | Yes. Follow existing Federal “Area 3" permit requirement | Yes. Follow existing “Area 3" reporting requirements (logbook, sales, weigh-out, notifications) |
| CNMI/precious corals | Yes. Follow existing Federal “exploratory area” permit requirement | Yes. Follow existing Federal requirements (logbook only) |
| PRIA/bottomfish | Yes. New Federal permit requirement | Yes. New Federal reporting requirement |
| PRIA/crustaceans | Yes. Follow existing Federal “Area 3" permit requirement | Yes. Follow existing “Area 3" reporting requirements (logbook, sales, weigh-out, notifications) |

## 5.4 Management Measures That Designate Additional Species as MUS

### 5.4.1 Addition of MUS to the Bottomfish and Seamount Groundfish FMP

**Alternatives:**

Alternative 1F **(Preferred Alternative)** - No Action - maintain current list of Bottomfish Management Unit Species as in Table 2.

Alternative 2F - Add the species listed in Table 3 as management unit species under the Bottomfish and Seamount Groundfish FMP.

### 5.4.2 Addition of MUS to the Crustaceans FMP

**Alternatives:**

Alternative 1G (**Preferred Alternative**) - No Action-maintain the current list of Crustaceans management unit species as listed in Table 3.

Alternative 2G - Add the deep-water shrimp, *H. laevigatus*, as a management unit species under the Crustaceans FMP.

Alternative 3G - Add all species of the spiny lobster, *Panulirus,* as a management unit species under the Crustaceans FMP.

Alternative 4G - Add the red crab, *Chaceon granulatus,* and all other *Chaceon* species, as management unit species under the Crustaceans FMP.

**Table 2.** Current Bottomfish MUS List. (Absence of an indigenous name implies that no local name is established or the area is not within the species' geographic range.)

| Scientific | English Common | American Samoa | Guam/CNMI | Hawaii |
|---|---|---|---|---|
| ***Bottomfish:*** | | | | |
| *Aphareus rutilans* | red snapper/silvermouth | palu-gutusiliva | maraap tatoong | lehi |
| *Aprion virescens* | gray snapper/jobfish | asoama | tosan | uku |
| *Caranx ignobilis* | giant trevally/jack | sapoanae | tarakito | white ulua/pau'u |
| *C. lugubris* | black trevally/jack | tafauli | trankiton attilong | black ulua |
| *Epinephelus fasciatus* | blacktip gouper | fausi | gadao matai | |
| *E. quernus* | sea bass | | | hapu'upu'u |
| *Etelis carbunculus* | red snapper | palu-malau | guihan boninas | ehu |
| *E. coruscans* | red snapper | palu-loa | onaga | onaga |
| *Lethrinus amboinensis* | ambon emperor | filoa-gutumumu | mafuti/lililok | |
| *L. rubrioperculatus* | redgill emperor | filoa-pa'o'omumu | mafuti tatdong | |
| *Lutjanus kasmira* | blueline snapper | savane | sas/funai | ta'ape |
| *Pristipomoides auricilla* | yellowtail snapper | palu-i'usama | guihan boninas | yellowtail kalekale |
| *P. filamentosus* | pink snapper | palu-'ena'ena | guihan boninas | opakapaka |
| *P. flavipinnis* | yelloweye snapper | palu-sina | guihan boninas | yelloweye opakapaka |

| | | | | |
|---|---|---|---|---|
| *P. seiboldi* | pink snapper | | guihan boninas | kalekale |
| *P. zonatus* | snapper | palu-sega | guihan boninas/gindai | gindai |
| *Pseudocaranx dentex* | thicklip trevally | | terakito | butaguchi/pig ulua |
| *Seriola dumerili* | amberjack | | guihan tatdong | kahala |
| *Variola louti* | lunartail grouper | papa | bueli | |
| ***Seamount Groundfish:*** | | | | |
| *Beryx splendens* | Alfonsin | | | kinmedai (Japanese) |
| *Hyperoglyphe japonica* | ratfish/butterfish | | | medai (Jap.) |
| *Pseudopentaceros wheeleri* | armorhead | | | kusakari tsubodai (Jap.) |

**Table 3**. Bottomfish Species proposed for addition to the Bottomfish MUS List

| | | |
|---|---|---|
| Carangidae | *Carangoides orthogrammus* | yellow-spotted trevally |
| | *C. caeruleopinnatus* | coastal trevally |
| | *Caranx melampygus* | bluefin trevally |
| | *C. papuensis* | brassy trevally |
| | *C. sexfasciatus* | bigeye trevally |
| | *Seriola rivoliana* | almaco jack |
| Serranidae | *Cephalopholis argus* | peacock grouper |
| | *C. igarashiensis* | yellow-banded grouper |
| | *C. sonnerati* | tomato grouper |
| | *C. urodeta* | flagtail grouper |
| | *Epinephelus hexagonatus* | hexagon grouper |
| | *E. howlandi* | blacksaddle grouper |
| | *E. lanceolatus* | giant grouper |
| | *E. macrospilos* | snubnose grouper |
| | *E. maculatus* | highfin grouper |
| | *E. merra* | honeycomb grouper |
| | *E. microdon* | smalltooth grouper |
| | *E. morrhua* | striped grouper |
| | *E. octofasciatus* | eightbar grouper |
| | *E. polyphekadion* | camouflaged grouper |
| | *E. timorensis* | yellowspotted grouper |
| | *Plectropomus laevis* | giant coral grouper |
| | *Saloptia powelli* | pink grouper |
| | *Variola albimarginata* | white-margined lyretail grouper |
| Lethrinidae | *Gnathodentex aurolineatus* | yellowspot emperor, striped large eye bream |

| | | |
|---|---|---|
| | *Gymnocranius microdon* | blue-spotted large-eye bream |
| | *G. grandoculis* | blue-line, large-eye bream |
| | (*G. rivulatus* in American Samoa) | |
| | *Lethrinus atkinsoni* | Pacific yellowtail emperor |
| | *L. erythacanthus* | orangefin emperor |
| | *L. harak* | thumbprint emperor, blackspot emperor |
| | *L. kallopterus* | orangefin emperor |
| | *L. obsoletus* | orange-striped emperor |
| | *L. olivaceus* | longface emperor |
| | *L. xanthochilus* | yellowlip emperor |
| | *Monotaxis grandoculis* | humphose bigeye bream, bigeye emperor |
| Lutjanidae | *Aphareus furca* | blue smalltooth jobfish |
| | *Lutjanus bohar* | twinspot snapper, red snapper |
| | *L. fulvus* | flametail snapper |
| | *L. gibbus* | humpback snapper |
| | *L. monostigmus* | onespot snapper |
| | *L. rufolineatus* | rufous snapper |
| | *L. sanguineus* | blood snapper |
| | *Paracaesio kusakarii* | kusakar snapper |
| | *P. stonei* | Stone's snapper |
| | *P. xanthurus* | deepwater bream |
| | *Pristipomoides argyrogrammicus* | blue gindai |
| | *P. multidens* | multidens snapper |
| Scorpaenidae | *Pontinus macrocephala* | hogo |

**Table 4 Current Crustacean Management Unit Species List**

| | |
|---|---|
| *Panulirus marginatus* | hawaiian spiny lobster |
| *P. pencillatus* | spiny lobster |
| Family *Scyllaridae* | slipper lobsters |
| *Ranina ranina* | kona crab |

**Table 5 Crustaceans proposed for addition to the Crustacean MUS List**

| | |
|---|---|
| *Heterocharpus laevigatus* | deep water shrimp |
| *Panulirus spp*. Complex | spiny lobsters (all species) |
| *Chaceaon granulatus* | red crab |

# 6.0 Relationship to other Applicable Laws and Policies

## 6.1 National Environmental Policy Act

Section 9.1 has been prepared in accordance with the requirements of the National Environmental Policy Act (NEPA), to assess the impacts on the human environment that may result from the proposed action. The following Environmental Assessment (EA Sections 6.1 – 6.1.5.7) examines a range of alternatives designed to bring the PRIA and CNMI into the Council's FMPs. It also incorporates by reference the cover sheet, table of contents, list of preparers, list of agencies, public review process and schedule, list of references and a discussion of the purpose and need of action from other sections of this document as indicated.

These amendments to the Council's Bottomfish, Crustaceans and Precious Corals FMPs have been written and organized in a manner that meets NEPA requirements, and thus this is a consolidated NEPA document, including an Environmental Assessment, as described in the NOAA Administrative Order (NAO) 216-6, Section 6.03.a.2.

### 6.1.1 Purpose and Need for Action

The purpose and need for the Federal action are described in Section 2.0.

### 6.1.2 Alternatives

The alternative management measures, considered by the Council, are described in Section 5.0.

### 6.1.3 Affected Environment Given Cumulative Impacts to Date

#### 6.1.3.1 Regulatory Environment

**CNMI**

Regulations implemented by CNMI's Division of Fish and Wildlife (DFW) in 2003 prohibit the use of scuba diving, hookah, explosives, poisons or electronic shocking devices to harvest fish. In addition, the disruption of habitat (dead or living coral) is prohibited.

**CNMI Bottomfish Regulations**

Bottom-trawl nets are prohibited and other types of nets are regulated. In addition, the Northern Islands bottomfish fishery is managed through the controlled issuance of business licenses, where float plans are required and data may be voluntarily provided by the vessel captain.

**CNMI Crustaceans Regulations**

DFW fishing regulations prohibit: harvest of lobster by spear or any method other than by hand, harvest of lobster less than 3 inches across carapace from the ridge between two largest spines above eyes to rear edge of carapace, and harvest of female lobsters carrying eggs or have been stripped of their eggs (CNMI-DFW 2003). No specific regulations regarding the deep-water shrimp and crab fishery have been implemented.

**CNMI Precious Corals Regulations**

In 1986, regulations governing the duties and responsibilities of the DFW for commercial and non-commercial fisheries were promulgated. In 2000 the non-commercial regulations were revised and commercial regulation changes are pending. Section 8 (CNMI-DFW 1986) of the regulations requires those wishing to dredge for precious corals in the EEZ of the CNMI to obtain an annual permit costing $500. New regulations (CNMI-DFW 2000) place a prohibition on taking "any and all species of hermatypic reef building corals, soft corals and/or stony hydrozoans." Although some scientists would not consider this to apply to precious corals as they generally occur much deeper than the depth limit of the coral reef ecosystem, others may regard them as soft corals. Whether this poses an inconsistency in the regulations has not been tested, as no one has requested a permit since the regulations took effect. Nevertheless, this may pose a conflict for any potential development of a precious coral fishery in the CNMI.

**PRIA**

Jurisdictional issues between the Department of Interior (DOI) and Department of Commerce (DOC) regarding the PRIA are described in section 6.1.3.2 and are not repeated here.

With the exception of regulations governing fishing around Midway Atoll, no regulations under the Magnuson-Stevens Act govern fishing for either bottomfish or crustaceans around the PRIA. While no explicit fishing regulations exist, the current USFWS position is that fishing within the refuge boundaries of Howland, Baker and Jarvis islands is inconsistent with the established purpose of these refuges. While questions persist about managing fishing within refuge boundaries, a memorandum of understanding (MOU) formulated jointly between USFWS, NMFS, and the Council may in the future facilitate management of fishing activities within refuges.

The USFWS manages the recreational fishery within the Johnston Atoll NWR. Current DOI policy prohibits the export of fish from the island, although on-island consumption by long-term residents and transient military personnel is permitted. In addition, the collection of selected organisms and shells is permitted in restricted areas by recreational divers. However, individuals collecting and harvesting marine organisms, defined under the Coral Reef Ecosystem FMP as a coral reef ecosystem management unit species, must also obtain a Coral Reef Ecosystem Special Permit, issued by the NMFS Pacific Islands Regional Administrator. All marine waters surrounding Johnston Atoll from the shoreline and seaward to a depth of 50 fathoms are designated by NOAA as a low-use marine protected area.

### 6.1.3.2 Jurisdictional Environment

This section reviews the issues surrounding marine boundaries in the Western Pacific Region. Delineation of current marine boundaries is discussed and specific areas of contention between various Federal and state authorities are summarized.

## Exclusive Economic Zone

The 1976 Fishery Conservation and Management Act (later the Magnuson Act and Magnuson-Stevens Act, MSFCMA) established U.S. jurisdiction from the seaward boundary of the territorial sea out to 200 miles from the shoreline for the purpose of managing fishery resources. Passage of the Magnuson Act was the first unilateral declaration of jurisdiction over a 200-mile zone by a major power. Presidential Proclamation 5030 of March 10, 1983, expanded Magnuson Act jurisdiction by establishing the U.S. exclusive economic zone; it declared, "to the extent permitted by international law ... sovereign rights for the purpose of exploring, exploiting, conserving and managing natural resources, both living and non-living, of the seabed and subsoil and the superjacent waters" in the 200-mile zone. The assertion of jurisdiction over the EEZ of the United States provided a basis for economic exploration and exploitation, scientific research, and protection of the environment under the exclusive control of the U.S. government. Congress confirmed presidential designation of the EEZ in1986 amendments to the Magnuson Act. Under the Magnuson Act, the Western Pacific Fishery Management Council has authority over the fisheries seaward of the State of Hawaii, Territories of American Samoa and Guam, Commonwealth of the Northern Mariana Islands, and the U.S. Pacific island possessions in the Pacific Ocean (MSA Sec §302).

The EEZ is measured from the "baseline" of U.S. states and overseas territories and possessions out to 200 nautical miles. Under the MSA, the shoreward boundary of the EEZ is a line coterminous with the seaward boundary of state or territorial waters. (As used elsewhere in this document, U.S. territories and possessions in the Western Pacific fall within the definition of "states" under the Magnuson Act (16 U.S.C. 1802, MSFCMA § 3 104-297)). In the case of the CNMI and the PRIA, the EEZ extends to the shoreline (Beuttler 1995).

State waters generally extend out to three miles from the ordinary low-water mark, as established by the Submerged Lands Act (SLA) of 1953.[2] The Territorial Submerged Lands Act (TSLA) of 1960 was enacted to convey to the governments of American Samoa, Guam and U.S. Virgin Islands the submerged lands from the mean high-tide line out to three miles from their coast lines (Beuttler 1995).

The CNMI was part of the United Nations Trust Territory of the Pacific Islands (administered by the United States) until 1978 when its citizens chose to be become a U.S. commonwealth by plebiscite and it was agreed to by Congress. Although title of the emergent land was conveyed to the Commonwealth, the U.S. government has not transferred to the CNMI government the submerged lands around the archipelago.[3] Submerged lands and underlying resources adjacent to CNMI are still owned by the Federal government and subject to its management authority (Beuttler 1995).

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[2]Under the SLA, the term "boundaries" or the term "lands beneath navigable waters" is interpreted as extending from the coastline to three geographical miles into the Atlantic Ocean or the Pacific Ocean, or three marine leagues (9 miles) into the Gulf of Mexico for the states of Texas and Florida.

[3] The Territorial Submerged Lands Act was enacted on October 5, 1974 (Beuttler 1995). Congress approved the mutually negotiated "Covenant to Establish a Commonwealth of the Northern Marianas (CNMI in political union with the U.S.)". However, the Covenant was not fully implemented until 1986, pursuant to Presidential Proclamation number 5564, which terminated the trusteeship agreement (Beuttler 1995).

In 1997, CNMI initiated civil action against the Federal Government in the U.S. District Court for the Northern Mariana Islands (*CNMI* v. *United States*, CA 97-0086) claiming jurisdiction over a 12-mile territorial sea. Subsequently, the District Court (1999) and U.S. Court of Appeals for the Ninth Circuit (2005) ruled against the CNMI government. In March 2006, the U.S. Supreme Court denied CNMI's petition for review and reversal of the appellate court's ruling, thus affirming the Federal Government's jurisdiction over all submerged lands and marine resources from the shoreline out to 200 nm around the Northern Mariana Islands.

In the PRIA, for which there are no sovereign entities similar to states or territories, various Federal agencies have jurisdictional authority and co-management responsibility. Authority is often established through statutes, Executive orders, and Presidential Proclamations, and marine boundaries are often unclear. There are specific, perhaps overlapping mandates for various agencies, and unresolved jurisdictional issues remain.

**US Fish and Wildlife Refuges and Units**

The USFWS manages a number of National Wildlife Refuges (NWRs) in the Western Pacific Region. The USFWS asserts the authority to manage marine resources and activities, including fishing activities within Refuge boundaries pursuant to the National Wildlife Refuge System Administration Act (NWRSAA) of 1966, as amended by the National Wildlife Refuge System Improvement Act of 1997, and other authorities (Gilman 2000). The USFWS asserts that NWRs are closed to all uses until they are specifically opened for such uses. The USFWS also claims that the agency is "solely" charged with making decisions whether to open NWRs for specific purposes that are compatible with the refuge's primary purposes and mission (Smith 2000).

Executive Order 1019 reserved and set apart Laysan and Lisianski Islands, and Maro and Pearl and Hermes Reefs, excluding Midway, "as a preserve and breeding ground for native birds" to be administered by the Department of Agriculture. The HIR was transferred to the DOI in 1939 and in 1940 renamed the Hawaiian Islands National Wildlife Refuge (HINWR) through Presidential Proclamation 2466, with control transferred to the USFWS. Within the HINWR, the USFWS asserts management authority over coral reef resources to a depth of 10 fm around all islands with the exception of Necker Island, where it asserts a 20 fm boundary. The USFWS acknowledges that all HINWR islands are part of the State of Hawaii, but asserts that the islands are Federally owned and administered as a NWR by the USFWS, established in 2001.

Kure Atoll was initially included in Executive Order 1019 in 1909, which establish the HIR. However, Kure Atoll was returned to the Territory of Hawaii in 1952 by Executive Order 10413 (Yamase 1982). Kure Atoll is the only State Wildlife Refuge in the NWHI and extends out three miles, to the State's seaward boundary (J. Feder, NOAA GCSW, pers. comm).

In the PRIA, the USFWS, based on interpretation of Executive Order 7358, asserts that its refuge boundaries extend to the extent of the NDSA, which was administered by the Department of Defense before the transfer of surplus land to the USFWS. The USFWS currently manages seven wildlife refuges in the PRIA: Jarvis, Baker, and Howland Islands, Johnston and Midway Atolls with Kingman Reef and Palmyra Atoll being the most recent additions (Smith 2000).

On January 18, 2001, the USFWS, through Secretarial Order 3223, declared Kingman Reef and the surrounding submerged lands and waters as a National Wildlife Refuge out to a distance of 12 nautical miles. Additionally, Secretarial Order 3224 declared the tidal lands and submerged lands and waters of Palmyra Atoll as a National Wildlife Refuge out to a distance of 12 nautical miles. The agency's jurisdictional claims over the seaward boundaries of its refuges have not been fully legally clarified at this time.

Johnston Atoll NWR is managed cooperatively with the Navy. The atoll was first established as a Federal bird refuge on June 29, 1926, through Presidential Executive Order 4467 to be administered by the Department of Agriculture. In 1934, through Executive Order 6935, the atoll was placed under the jurisdiction of the Navy for administrative purposes and has been used as a military installation since 1939. In 1941 Executive Order 8682 designated Johnston and other Pacific atolls NDSA. Since 1976, the USFWS, under agreement with the military, assists in management of fish and wildlife resources on the atoll. The USFWS manages a recreational fishing program in the NWR (Smith 2000).

Administration of Jarvis, Howland, and Baker Islands were transferred from the Office of Territorial Affairs to the USFWS in 1936 to be run as NWR. The USFWS asserts refuge boundaries out to three nautical miles, and prohibits fishing and any type of unauthorized entry (Smith 2000). The USFWS acknowledges the Council's fishery management authority, in coordination with the NMFS, within the "200-nautical mile EEZ" (Smith 2000).

Rose Atoll NWR, located in American Samoa, was established through a cooperative agreement between the Territory of American Samoa and the USFWS in 1973. Presidential Proclamation 4347 exempted Rose Atoll from a general conveyance of submerged lands around American Samoa to the Territorial Government. The boundary of the refuge extends out to three miles around the atoll and is under the joint jurisdiction of the Departments of Commerce and Interior, in cooperation with the Territory of American Samoa. The USFWS acknowledges fishery management authority of the Council, in coordination with the NMFS, within the "200-nautical mile EEZ" (Smith 2000).

In the Ritidian Unit of the Guam National Wildlife Refuge, USFWS has fee title, which includes 371 acres of emergent land and 401 acres of submerged lands down to the 100-foot bathymetric contour. The submerged lands adjacent to Ritidian were never transferred to the Territory of Guam pursuant to the TSLA by the Federal government. In 1993, the USFWS acquired the emergent land of the Ritidian Unit and the surrounding submerged lands from the Navy at no cost (Smith 2000).

**Department of Defense Naval Defensive Sea Areas**

A number of Executive Orders have given administrative authority over territories and possessions to the Army, Navy, or the Air Force for use as military airfields and for weapons testing. In particular, Executive Order 8682 of 1941 authorizes the Secretary of the Navy to control entry into NDSAs around Johnston, and Midway Atolls, Wake Island, and Kingman Reef. The NDSA includes "territorial waters between the extreme high-water marks and the three-mile marine boundaries surrounding" the areas noted above. The objectives of the NDSA are to control entry; to provide for protection of military installations; and to protect the physical security of, and ensure the full effectiveness of, bases, stations, facilities, and other installations

(32 CFR Part 761). In addition, the Navy has joint administrative authority with the USFWS of Johnston Atoll and has recently transferred administrative authority over Kingman Reef to the USFWS. In 1996 Executive Order 13022 rescinded the Midway Atoll NDSA. Additionally, the Wake Island NDSA has also been suspended until further notice.

The Navy uses Farallon de Mendinilla in the CNMI and Kaula Rock in the main Hawaiian Islands, as military bombing ranges. The Navy also restricts access to a variety of waters offshore from military ports and air bases in Hawaii, PRIA, Guam, and the CNMI.

**CNMI**

Currently, the EEZ includes all waters surrounding the Northern Mariana Islands from shore out to 200 miles, hence the Federal Government has jurisdiction over ocean lands and resources within the EEZ. However, CNMI, like the governments of other states, has the authority to regulate fishing by its local fishermen, and vessels. For the purpose of fisheries conservation and management, Amendment 8 to the Bottomfish and Seamount Groundfish FMP, Amendment 12 to the Crustaceans FMP, and Amendment 6 to the Precious Corals FMP defer regulatory authority to the CNMI government in regulating its fishermen in waters 0 to 3 nm of the EEZ. These FMP amendments do not concede that CNMI has sovereignty over EEZ resources.

**PRIA**

In the PRIA determination of primary jurisdiction over nearshore fisheries is an ongoing issue between the Departments of the Interior and Commerce. Management authority is currently unresolved because no clear baseline boundary has been designated from which the seaward boundary of the PRIA are measured. Seaward boundaries are not clearly defined because some islands in the PRIA do not appear to have a seaward boundary as defined by U.S. law (Beuttler 1995). For this reason, jurisdictional boundaries have been claimed by Federal agencies in terms of fathoms, miles, or the territorial sea. Furthermore, it is recognized that various Executive Orders have given administrative authority of the PRIA to either the Department of Defense (DOD) or DOI. However, Executive Orders themselves do not convey title of submerged lands, unless specifically stated. In any case, based on tentative interpretation by the NOAA legal counsel, MSA authority applies to all marine waters around Federally owned possessions (i.e., PRIA), including marine resources within bays, inlets, and other marine waters to the shoreline (Beuttler 1995).

Additionally, because the NWRSAA does not explicitly authorize the President to withdraw land for a wildlife refuge, the DOI argues that the President could rely on the implied authority to reserve public lands recognized in *United States v. Midwest Oil Co.* 236, U.S. 459 (1915). However, since the Federal Land and Policy Act of 1976 repealed the President's authority, effective on and after approval of the Act, to make withdrawals and reservations resulting from the acquiescence of Congress (*U.S. v. Midwest Oil Co*.), it appears that since 1976 the President has not had the authority to establish or expand a wildlife refuge within the U.S. territorial sea (12 miles) or the EEZ using presidential authority recognized in *Midwest Oil* (Moss 2000). This could call into question asserted marine boundaries of any NWR established after enactment of the FLPMA.

### 6.1.3.3 Physical Environment

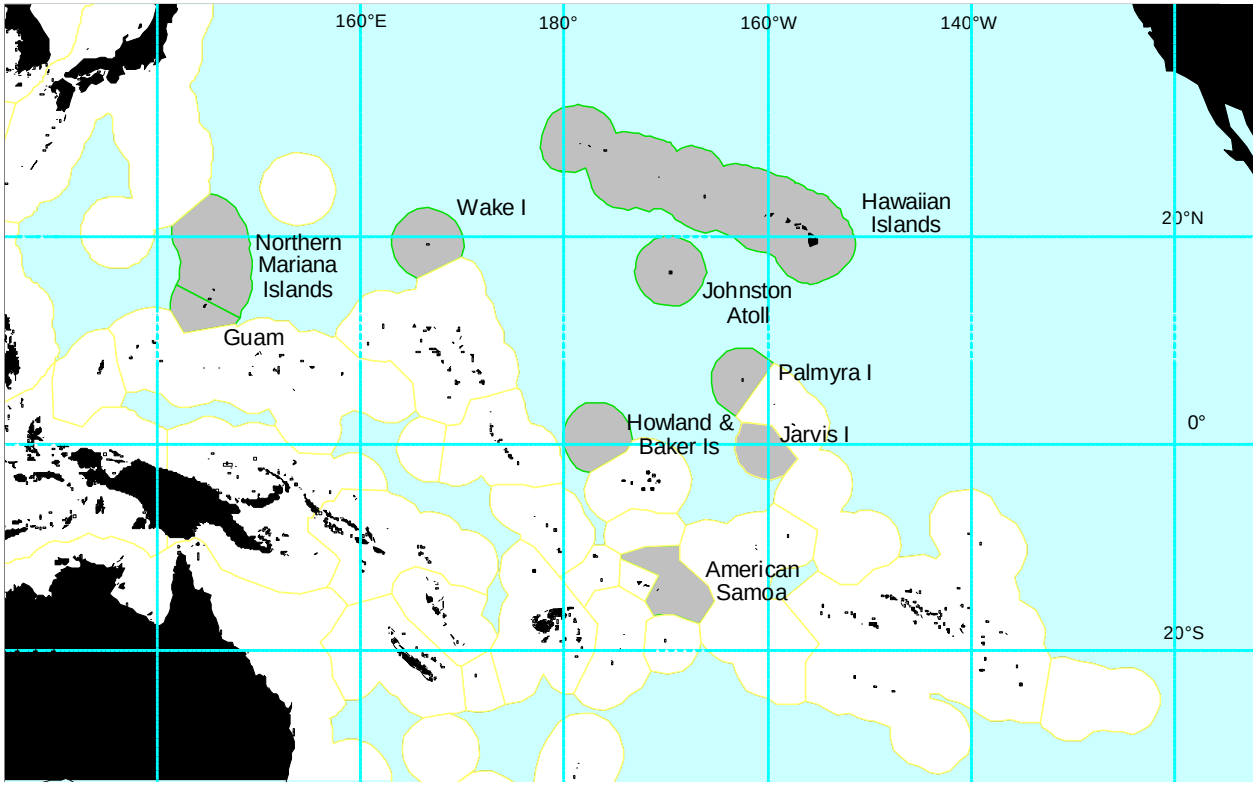



**Figure 1** EEZ waters of the Western Pacific US are shaded in gray

**CNMI**

The CNMI encompasses 14 islands and many banks stretching over 400 nm in a north-south direction. Within the EEZ is a line of seamounts also oriented north-south 120 nm west of the CNMI. The chain of islands north of Saipan is called the 'Northern Islands'. Several of these Northern Islands have been designated as wildlife conservation areas. The seamounts have been named, Pathfinder Reef, Bank D, Bank C, and Arakane Reef. Islands are classified geologically as "older" raised limestone islands (Rota, Aguijan, Tinian, Saipan, and Farallon de Medinilla (FDM)) and "younger" volcanically active (Anatahan, Sarigan, Guguan, Alamagan, Pagan, Agrihan, Asuncion, Maug and Farallon de Pajaros or Uracas). The older islands have fringing and/or barrier reefs, while the volcanically active islands have relatively little coral reef (Eldredge 1983). Over 99.5% of the population occurs on the Southern Islands of Saipan, Tinian and Rota, with 89% living on Saipan (Gourley 1997). Aguijan is the only uninhabited Southern Island.

CNMI's bathymetry has been described by Hunter (1995) and Rohmann et al. (2005). Their studies define coral reef habitat as all areas to a depth of 100 meters. Rohmann et al. (2005), note that Hunter generally overestimated coral ecosystem area inside the 10-fathom depth curve, and underestimated coral ecosystem area inside the 100-fathom depth curve. Rohmann et at data, as

presented in Table 6, estimates shallow water habitat for the PRIA and indicates potential bottomfish and crustacean habitat. In CNMI, 476 $km^2$ of seabed is estimated between 0 to 100 fathoms, and of that 123 $km^2$ occurs within the 10 fathom depth curve (Rohmann et al. 2005). None of the other Northern Islands have viable fishing grounds beyond 3 nm. The submerged seamounts 120 nm west of the emergent islands have a total of 50-60 $km^2$ (10%) of viable habitat. Forty-two $km^2$ (8%) are in the EEZ near the inhabited Southern Islands and are already heavily fished.

**PRIA**

The Pacific Remote Island Areas of Howland, Baker, Jarvis, Kingman Reef, and Palmyra have been basically unoccupied for all of modern times, while Wake Island and Johnston Atoll have had varying levels of military populations for most of the 20th century (Midway Atoll is not considered in these amendments as it is already included in all Council FMPs, except for the Coral Reef Ecosystems FMP). The marine environment surrounding these islands is considered some of the most pristine in the world. Live coral cover often exceeds 25% of the total reef and fish stocks are considered to be virgin populations. These islands were formed through volcanic activity and consequently have steep drop-offs to the sea floor. Each of these islands has relatively little habitat suitable for sustaining a large marine biomass. The potential area suitable for bottomfish and/or crustacean fishing is indicated in Table 6.

**Table 6.** Areas ($km^2$) of Shallow Water Habitat for Pacific Remote Island Areas

| Island | 0-10 fathoms ($km^2$) | 0-100 fathoms ($km^2$) |
|---|---|---|
| Baker (*NWR) | 5.2 | |
| Howland (*NWR) | 3.0 | |
| Jarvis (*NWR) | 3.0 | |
| Johnston Atoll (**NDA and NWR) | 150.1 | 240.4 |
| ***Kingman Reef (NWR) | 20.9 | 102.4 |
| ***Palmyra Atoll (NWR) | 47.2 | 63.0 |
| Wake | 22.9 | 30.5 |

* National Wildlife Refuge

** National Defensive Sea Area (Data from Rohmann et al. 2005)

*** USFWS established in January 2001 through secretarial order these areas as NWR. Palmyra Atoll was purchased in 2000 by the Nature Conservancy.

**Baker Island**

Baker Island is located at 0° 13' N and 176°38' W. Located 1,600 nm to the southwest of Honolulu, Baker is only 13 miles north of the equator. It is a coral topped seamount surrounded by a narrow fringing reef which drops steeply very close to the shore. Baker Island was designated as a National Wildlife Refuge in 1936 and is administered by the USFWS. The Refuge boundary, established by the USFWS, extends seaward from shoreline to 3 nm. The USFWS prohibits fishing within the Refuge boundaries.

A preliminary general description of the overall benthic environment of Baker Island from the 2004 surveys conducted by NMFS has been provided in the Cruise Report. It is excerpted here:

> *We observed the dominant habitat around Baker to be continuous reef, with the exception along the far eastern terrace which was dominated by rubble flats. Overall, we observed 40.9% of the continuous reef to be live coral, 13.8% to be calcareous coral pavement, and 28.9% to calcareous coral rubble. We observed 57.8% of the continuous reef near the eastern terrace and the north shore to be live coral* (NMFS 2004).

In 2004, a NMFS rapid ecological assessment team (REA) documented 166 species of fish on the reefs at Baker Island during six dives of about 75 minutes each (NMFS 2004). In addition, the IUCN red-listed humphead wrasse (*Cheilinus undulatus*), two species of lionfishes (*Pterois* spp.), a scorpionfish, two angel fishes, and Tinker's butterfly fish (*Chaetodon tinkeri*) were sighted in separate activities (NMFS 2005d). It should be noted that humphead wrasse are unusual – apart from being the largest of the wrasse family (Labridae), because they are actually capable of eating the toxic crown-of-thorns starfish (*Acanthaster planci*). *A. planci* is a coral predator that is widely known for depredating coral reefs (Hoover 1998).

Based on preliminary data gathered during the 2004 NMFS survey of Baker Island NMFS researchers determined that both biomass and diversity remained high among fish species (NMFS 2005d). Numerically, the NMFS researchers found that small species of zooplanktivores dominated. Zooplanktivores can generally be found in the water column above coral reefs often in large schools providing a trophic link between fish and plankton. Two species of basslets (*Pseudanthias barttlelorum* and *Luzonicthys whitleyi*) and basslet-like damsel fish (*Lepidozygus tapeinosoma*) were the most abundant of these. Coral and algal grazers feeding on the benthic habitat of the reefs included numerous surgeon fishes (Family Acanturidae) and parrotfishes (Family Scaridae). Higher on the trophic scale researchers found, in order of decreasing biomass, red snapper (*Lutjanus bohar*), grey reef sharks (*Carcharhinus ambylorhyncus*), whitetip reef sharks (*Triaenodon obesus*), several species of carangids including black jacks (*Caranx lugubris*) and the bluefin trevally (*C. melampygus*). A few serranid (sea basses) species were also found including peacock grouper (*Cephalopholis argus*), blacktip grouper (*C. fasciatus*), coral hind (*C. miniata*), flagtail grouper (*C. urodeta*), and slenderspine grouper (*Gracilla albomarginata*).

There are 88 species in 35 genera of corals and sea anemones reported at Baker Island (NMFS 2004). The dominant genus of coral at Baker Island is *Acropora* spp. *Acropora* spp. include

staghorn and table corals. This genus is the most common reef building corals in the world except in Hawaii (Hoover 1998 p. 51). According to NMFS other families of coral found at Baker are *Favia, Fungia, Montipora, Pavona,* and *Porites.* The overall assessment by the researchers in 2004 at Baker was that, at the six sites surveyed, coral densities were low, but the average colony size was high compared to reefs at nearby Howland Island. Some bleaching was found in species of faviids and acroporids, but no diseases were noted. (NMFS 2005d).

The 2004 survey observed that a pink crustose coralline algae was dominant at many sites on baker, while macroalgal cover was very low. Algal species found at survey sites included four species of green algae, two species of red algae, one species of brown algae, blue-green algae, and turf algae. (NMFS 2005d).

NMFS has found numerous macroinvertabrates occurring at Baker Island. The 2004 survey documented 77 species of non-coral invertebrates at Baker Island and nearby Howland Island. Given the large numbers of invertebrates that exist, this is likely only a partial list.

The giant clam (*T. Maxima*) is abundant in the intertidal habitat but is rarely observed in the subtidal zone.

Juvenile and adult green sea turtles are abundant at Baker Island.

There is, designated in the Council Coral Reef Ecosystem FMP (FR notice Vol. 69, No 36), a no take MPA from 0 to 50 fm around Baker Island**.**

**Howland Island**

Howland Island is located at 0°48' N and 176° 38' W, 48 miles north of the equator and 36 nautical miles north of Baker Island. The island, the top of an emergent seamount, is fringed by relatively flat coral reef that drops off sharply. While there have been few marine surveys of the marine environment at Howland Island, the ecosystem is reported to be in relatively pristine condition.

Howland Island was designated as a National Wildlife Refuge in 1936 and is administered by the Department of the Interior through the USFWS. The Refuge boundary, established by the USFWS, extends seaward from the shoreline to 3 nm. The USFWS prohibits fishing within the Refuge boundaries. Within the Refuge boundary there is approximately 5 $km^2$ of coral reef habitat (NMFS 2005d).

As above, a preliminary general description of the surrounding benthic habitat is excerpted from the Cruise Report for the 2004 NMFS survey of Howland Island:

> *For all 9 towed diver surveys, we observed continuous reef to be the dominant habitat around the entire island. Overall, we recorded 37.5% of the continuous reef to be live coral, 20.5% to be calcareous coral pavement, and 17.37% to be calcareous coral rubble* (NMFS 2004).

The 2004 survey of Howland Island found more or less the same abundance and diversity of fish as at Baker Island described in the preceding section, with the exception of giant trevally (*Caranx ignoblis*), which although uncommon, was sighted at Baker Island, but was not seen at Howland Island.

There are 96 species in 29 genera of corals and sea anemones reported at Howland Island (NMFS 2004). The dominant genera of coral at Howard Island is *Acropora* spp. *Acropora* spp. include staghorn and table corals. This genera is the most common reef building corals in the world except in Hawaii (Hoover 1998 p. 51). According to NMFS other families of coral found at Baker are *Favia, Fungia, Montipora, Pavona,* and *Porites.* The overall assessment by the researchers in 2004 was that at the six sites surveyed coral densities were moderate, but the average colony size was moderate or equal compared to those found at reefs around nearby Baker Island. There was little evidence of bleaching, but a few colonies at survey sites showed signs of disease in 2004. (NMFS 2005d).

NMFS has found numerous macroinvertabrates occurring at Howland Island. The 2004 survey documented 77 species of non-coral invertebrates at Howland Island and nearby Baker Island. Given the large numbers of tropical marine invertebrates that exist, this is likely only a partial accounting.

The giant clam (*T. Maxima*) occurs in abundance at Howland. This species is protected under the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES).

Adult green sea turtles have been observed in the waters surrounding Howland.

There is, designated in the Council Coral Reef Ecosystem FMP (FR notice Vol. 69, No 36), a no take MPA from 0 to 50 fm around Howland Island**.**

**Jarvis Island**

Jarvis Island is part of the Line Island Archipelago, located at 0° 23' S, 160° 01' W and 1,300 miles south of Honolulu. Jarvis Island is an emergent seamount. Jarvis Island, like Howland and Baker, was designated as a National Wildlife Refuge in 1936 and is administered by the USFWS. The Refuge boundary, established by the USFWS, extends seaward from shoreline to 3 nm. The USFWS prohibits fishing within the Refuge boundaries.

A preliminary study identified 1,015 species of fish from 146 families occurring in the Line Islands (Mundy 1997). The fringing reef is reportedly healthy with total coral reef coverage approximately 8 $km^2$. In April 2000 and March 2002, a joint NMFS-USFWS cruise conducted a rapid ecological assessment of Jarvis Island.

In 2004, a survey of habitat and biota was conducted at Jarvis Island. This 2004 survey represents the most recent best available information. Preliminary data from the cruise report will be summarized here. The impression of the NMFS researchers of near-shore fish populations in 2004 was that they were healthy and survey results were similar to those of the 2002 survey. NMFS researchers documented a total of 171 species from 36 families of fish.

Sharks from three families were commonly seen. In addition to the normally seen gray reef shark, blacktip reef shark, and whitetip reef shark, the great hammerhead (*Sphyrna morrakan*) was seen. There was one sighting of the rare whale shark (*Rhincodon typus*). Rays were also common at Jarvis. Amongst bony fishes, the zooplanktivorous anthias *P. bartlettorum* was the most common numerically. Other families represented at Jarvis include squirrelfishes, groupers, jacks (black jacks and bluefin trevally), snappers (*L. bohar* was the most commonly seen), butterflyfishes, angelfishes, damselfishes, wrasses, parrotfishes, and surgeonfishes (NMFS 2005a).

Since 2000, 48 species of stony corals from 20 genera and 2 species of soft corals have been identified from Jarvis Island. The two most dominant coral genera found at Jarvis survey sites are *Pocillapora* and *Montipora.* Jarvis Island lacks a lagoon environment and therefore corals are most exposed and more prone to weather/wave damage (NMFS 2005a).

In 2004, researcher documented at least 15 types of marine alga at Jarvis Island. The most common was a brown encrusting alga believed to be of the genus *Lobophora*. Red turf aglae were also very common. An unknown alga was found to be very common in the near-shore benthic environment as well (NMFS 2005a).

In 2004, researchers found non-coral macroinvertebrates at Jarvis Island included crustaceans (crabs and barnacles mostly), bryozoans, hydrozoans, gastropods, octopus, starfish (*Linckia spp.*), and sea urchins. This was a cursory inventory (NMFS 2005a).

There is, designated in the Council Coral Reef Ecosystem FMP (FR notice Vol. 69, No 36) a no take MPA from 0 to 50 fm around Jarvis Island**.**

**Johnston Atoll**

Johnston Atoll, is located at 16° 45' N latitude and 169° 31' W longitude, approximately 720 nm southwest of Honolulu. French Frigate Shoals in the NWHI is the nearest land 450 nm to the northwest. Johnston Atoll sits on a submerged coral reef platform more than 205 $km^2$ in size and is comprised of four small islands. The atoll was declared a refuge in 1926 by Executive Order 4467. In 1934 it was placed under the control of the US Navy, which administers a Naval Defensive Sea Area that extends out to three miles around Johnston. This area is closed to the public and permission is needed to enter the area. This area encompasses roughly 50% of the entire coral reef habitat found at the atoll. In 1976 the USFWS was granted jurisdiction and responsibility for the management for the atoll's natural resources. The USFWS allows some recreational fishing within the Refuge.

A preliminary description of the benthic habitat from the 2004 NMFS survey is excerpted here:

> *We observed the dominant habitats along the forereef slope to consist of continuous reef. Along the back reef and adjacent lagoonal environments, we observed the dominant habitats to be both continuous reef and patch reef. Within the insular shelf along the south side, the dominant habitats were rubble and sand flats. Along the eastern insular shelf, the dominant habitats consisted of spur and groove and continuous reef. The*

*dominant habitats in the southeast insular shelf consisted of rubble flats and [coral] pavement* (NMFS 2004).

Three hundred and ten species of fish are known to occur around Johnston Atoll including, tuna, jacks and sharks, particularly the gray reef shark (Ralston et al. 1986) (NMFS 2005a). Resident coral reef fish populations varied markedly in both species diversity and standing biomass from fish assemblages in the NWHI. According to the researchers numerical densities were 25-33% lower than those found in the NWHI. Additionally, standing biomass appeared relatively low in comparison to the NWHI. Large species such as giant trevally, bluefin trevally, and grey reef sharks were infrequently observed. Other species not seen on Johnston surveys, but commonly found in Hawaii, were the bigeye emperor (*Monotaxis grandoculis*) and bluespine unicorn fish (*Naso unicornis*). The researchers hypothesized that these results may be due to an emphasis on lagoon survey sites. Researchers also noted that there was a relatively high proportion of terminal phase male labrids and scarids.

There have been 40 species within 16 genera of stony corals found at Johnston Atoll. The amount of endemism is still under debate with more genetic analyses needing to be completed before conclusion can be drawn (NMFS 2004). During the 2004 survey, some bleaching and disease were found at almost all sites at Johnston Atoll. Very little of the observed damage could be attributed to animal predation. (NMFS 2005d)

Researchers on the 2004 survey found non-coral macroinvertebrate densities to be low at Johnston (NMFS 2005a). Macroinvertebrates found included representatives from the phyla echinodermata (sea stars, holothurians, and brittle stars), mollusca (sea slugs, bivalves), crustacean (hermit crabs), and urochordata (tunicates). This is not an exhaustive list of the marine macroinvertebrates at Johnston Atoll.

There is, designated in the Council Coral Reef Ecosystem FMP (FR notice Vol. 69, No 36), a low-use MPA from 0 to 50 fm around Johnston Atoll**.**

**Palmyra Atoll and Kingman Reef**

Palmyra Atoll is comprised of approximately 52 islets surrounding three central lagoons. This low-lying coral atoll is approximately 1,056 nm south of Honolulu at 5°53' N and 162°05' W. Kingman Reef, at 6°23' N and 162°24' W, is located 33 nm northwest of Palmyra. Palmyra and Kingman occur at the northern end of the Line Island archipelago, situated halfway between Hawaii and American Samoa. Palmyra Atoll is surrounded by extensive reef flats on all sides. This coral reef is approximately 5 miles long by 2 miles wide with approximately 400 $km^2$ of coral reef habitat surrounding Palmyra. Kingman Reef consists of a reef and shoal approximately 49 $km^2$ in size.

Palmyra Atoll, an incorporated US Territory, has been recently purchased by the Nature Conservancy and potential activities are still in flux. This prompted the Secretary of the Interior through Secretarial Orders 3223 and 3224 (FR Vol. 66, No. 16) to declare both the land and surrounding waters to 12 nm of Kingman Reef and Palmyra Atoll National Wildlife Refuges on 18 January 2001. The Nature Conservancy would like to promote ecotourism and recreational

fishing within the lagoon as well as pelagic trolling. The Department of the Navy administers a Naval Defensive Sea Area at Kingman Reef that extends out to three miles. This area is closed to the public and permission is needed to enter the area. And finally, the Council recommended and NMFS approved and implemented regulations designating the waters to 50 fathoms around Palmyra as a low-use Marine Protected Area (MPA) in its Coral Reef Ecosystem FMP (FR notice Vol. 69, No 36).

The Nature Conservancy purchased Palmyra Atoll in late 2000, and manages the atoll as a nature preserve. The Magnuson-Stevens Act establishes the Council's jurisdiction over EEZ waters surrounding Palmyra to the mean high water mark including the waters of the lagoon. A USFWS assertion of refuge jurisdiction out to 12 nm from shore has not been fully legally clarified. If allowed by the Secretary of the Interior, individuals collecting and harvesting marine organisms defined under the Coral Reef Ecosystem FMP as coral reef ecosystem management unit species must also obtain a Coral Reef Ecosystem Special Permit, issued by the NMFS Pacific Regional Administrator, as all marine waters surrounding Palmyra Atoll from the shoreline and seaward to a depth of 50 fathoms are designated by NOAA as a low-use marine protected area.

The coral reef resources around Palmyra have been poorly studied. Mundy found over 1,015 species of fish from 146 families that are known to occur in the Line Islands (Mundy, 1997). The giant clam (*T. Maxima*), a CITES listed species, is found in the waters surrounding the atoll. While the coral reef habitat found within the lagoons has been impacted by past dredging activities the outer reef is reportedly healthy. In April 2000 and March 2002, a joint NMFS-USFWS cruise conducted a rapid ecological assessment of Palmyra atoll and Kingman reef. Another survey was conducted in 2004. The preliminary information contained in the 2004 cruise report represents the most current available information on the habitat and biota of Palmyra Atoll and Kingman Reef.

During the 2004 survey there were 209 fish species found at Palmyra Atoll from the same families found at Jarvis Island. The general impression of the researchers was that larger fish were less abundant at Palmyra than at Jarvis Island. The zooplanktivores, commonly the most numerically abundant species found at other PRIA, were less abundant at Palmyra. Reef sharks, while common, seemed to be less abundant than seen in previous surveys (NMFS 2005a).

In 2004, researchers documented 165 fish species in the near shore habitat in the same families found at Jarvis. The overall impression of researchers was that all major fish species seemed to be less abundant than at either Jarvis Island or Palmyra. Zooplanktivorous anthias at Kingman Reef were at their lowest abundance rates of any of the islands or atolls surveyed in 2004 (NMFS 2005a).

At least 165 species of cnidarians have been documented occurring at Palmyra Atoll since 1987 (NMFS 2005a). Somewhere between 1987 and 1998 there was a mass bleaching event at Palmyra. The reefs surrounding the atoll have yet to recover from it. In 2004, coral species from 36 genera were identified at Palmyra. These were dominated by species from the genera *Pocillapora, Porites,* and *Pavona.*

Some 157 species of cnidarians from 46 genera are documented from Kingman Reef. Numerically, in 2004, corals from the genera *Fungia* and *Porites* were found to have the highest number of colonies. Fewer than 10% of these colonies were greater than 10 centimeters in diameter (*Fungia* colonies are generally small).

In 2004, researchers found 15 genera of algae at Palmyra and 16 at Kingman Reef. Both Palmyra and Kingman Reef showed high abundances of algae from the genus *Halimeda* and red turf algae.

Palmyra Atoll has many habitats and a large number of non-coral macroinvertebrates. The common are hydroids. While giant clams can be found around Palmyra they are not in great abundance. Kingman Reef is reported to have a high abundance and diversity of macroinvertabrates. Giant clams are common.

**Wake Island**

Wake Island is located at 19° 18' N latitude and 166° 35' E longitude and is the northernmost atoll of the Marshall Islands Archipelago, located approximately 2,100 miles west of Hawaii. Wake Island is an atoll comprised of three islands, Wake, Peale, and Wilkes. Wake Island is administered by the US Air Force's 15$^{th}$ Air Base Wing, Hickam Air Force Base, Hawaii. The Air Force administers a Naval Air Space Reservation Wake Island that extends out to three miles. Restrictions imposed on entry to Naval Air Space Reservations over Wake Island have been suspended subject to reinstatement without notice. This area is closed to the public and permission is needed to enter the area. The USFWS is currently considering incorporating Wake Island as part of the NWR system.

The total area of coral reef habitat at Wake Island is approximately 32 km$^2$. One hundred and twenty-four species of reef fish have been recorded at Wake as well as a diverse assemblage of commercially important species of tuna, snappers, jacks and groupers. Sharks, particularly the gray reef, are reportedly abundant. The giant clam (*Tridacna maxima*) is reported to be abundant in the lagoon. Fishing is prohibited within the lagoon (Molina et al. 1998).

There is, designated in the Council Coral Reef Ecosystem FMP (FR notice Vol. 69, No 36) a low-use MPA from 0 to 50 fm around Wake Island.

### 6.1.3.4 Fisheries

Since the Council's final action in March 2002, to recommend the measures discussed here, the Council has recommended and NMFS has approved and implemented the Coral Reef Ecosystem-FMP, which includes CNMI and the PRIA, in its management area.

**CNMI**

When the Fishery Conservation and Management Act was passed by the US in 1976, the fisheries off the coasts of CNMI were not included. A 1983 amendment to the Act included the fisheries off the CNMI under the Act.

Of recent concern has been the lack of statutory authority to regulate the commercial take of fish in Commonwealth waters. Both non-commercial and commercial regulations were drafted by the DFW in 1993. While the non-commercial regulations (Appendix 1) were passed, the commercial regulations have been held up due to an internal jurisdictional issue. It is unclear whether the law which created the Division of Fish and Wildlife (Public Law 2-51) allows them to draft and enforce commercial fishing regulations. The proposed commercial regulations are currently being revised but the issue still remains. On the Federal side, none of the FMPs were written to include the CNMI, except the Coral Reef Ecosystem FMP, and to date only the Pelagics FMP has been amended to include those species caught in the CNMI EEZ.

The preferred alternative would continue to leave the small boat fishery and the in-shore zone (0 to 3 nm) under CNMI management. It is unlikely that Federal management of inshore fisheries would yield better information or sustainability for inshore marine resources beyond that currently gained from current and future CNMI management measures for small boat fisheries, unless major investments in personnel and infrastructure were made by NMFS. It is unlikely that these investments would occur. Therefore, it is more cost effective and prudent to leave the small boat fishery to management by CNMI. Contained in this document are the management measures being employed by CNMI as jurisdictional issues continue to be clarified in the courts. It is likely that if NMFS were to implement management measures for in-shore CNMI fisheries, that this would be a duplication of current efforts. Due to costs and duplication of effort, additional Federal management for inshore and small boat fisheries would be inconsistent with National Standard 7 of the Magnuson-Stevens Act.

CNMI Department of Fish and Wildlife has managed these fisheries throughout CNMI to date. Non-commercial regulations prohibiting destructive fishing practices are generally voluntarily complied with by the commercial fleet. Bottom-trawl nets are not allowed, while other types of nets are regulated, requiring clear designation of ownership on each net. MPAs have been established and large commercial operations are informally limited through the controlled issuance of business licenses. Enforcement and compliance levels are unknown. The preferred alternative implements reporting requirements and establishes mechanisms to implement specific regulatory controls throughout federal waters surrounding CNMI should the need arise.

**CNMI Bottomfish Fishery**

The CNMI bottomfish fishery occurs primarily around the islands and banks from Rota Island to Zealandia Bank north of Sarigan. However, the data are limited to the catches landed on Saipan, which is by far the largest market. Landings (in pounds) and revenues are inflated by 30% to represent the CNMI as a whole (assuming 60% coverage of the commercial sales on Saipan and that Saipan is 90% of the market). The fishery is characterized in this report by data collected through the Commercial Purchase Database, which indirectly records actual landings by recording all local fish sales to commercial establishments. This data collection system is dependent upon voluntary participation by first-level purchasers of local fresh fish to accurately record all fish purchases by species categories on specially designed invoices. DFW staff routinely collected and distributed invoice books to around 27 participating local fish purchasers in 2004; which include the majority of the fish markets, stores, restaurants, hotels, government

agencies, and roadside vendors (fish-mobiles). This reduction from participants last year is likely the result of reduction in the number of vendors, businesses closing and a decrease in voluntary compliance with the program.

Although this data collection system has been in operation since the mid-1970s, only data collected since 1983 are considered accurate enough to be comparable for most aspects of the fishery. The identification and categorization of fishes on the sales invoices has improved markedly in the last 10 years. Unfortunately, two inherent problems remain in the database. First, a number of the bottomfish MUS are not listed on the sales receipts. This was partially corrected by the addition of new taxa (but not all Bottomfish MUS species) to the receipts (black jack, giant trevally, amberjack, ehu, blueline snapper, and kalikali were added to sales invoices in 2001). Moreover, for those BMUS species not specifically listed on the receipts there remains some confusion regarding where they should be added to the receipts. Second, the commercial sales invoice is a voluntary program which not all vendors participate in.

The CNMI's bottomfish fishery consists primarily of small-scale local boats engaged in local commercial and subsistence fishing, although a few (generally less than 5) larger vessels (30 to 60 ft) usually participate in the fishery. The bottomfish fishery can be broken down into two sectors: deep-water greater than 500 ft) and shallow-water (100 to 500 ft) fisheries. The deep-water fishery is primarily commercial, targeting snappers and groupers. The snappers targeted include members of *Etelis* and *Pristipomoides*, whereas the eight-band grouper (*E. octofasciatus*) is the only targeted grouper. The shallow-water fishery targeting the redgill emperor (*Lethrinus rubrioperculatus*), is mostly commercial but also includes subsistence fishermen. These fishermen are taking not only bottomfish, but many reef fishes (especially snappers and groupers) as well. Hand lines, home-fabricated hand reels and electric reels are the commonly used gear for small-scale fishing operations, whereas electric reels and hydraulics are the commonly used gear for the larger operations in this fishery. Historically, some trips have lasted for more than a day, but currently, effort is defined and calculated on a daily trip basis. Fishing trips are often restricted to daylight hours, with vessels presumed to return before or soon after sunset, unless fishing in the northern islands. In terms of participation, the bottomfish fleet consists primarily of vessels less than 30 ft long that are usually limited to a 50-mi radius from Saipan. The larger commercial vessels that are able to fish extended trips and which focus their effort from Esmeralda Bank to Zealandia Bank are presumed to have landed the majority of the deep-water bottomfish reported through the purchase receipt forms.

Bottomfish fishing requires more technical skill than pelagic trolling, including knowledge of the location of specific bathymetric features. Presently, bottomfish fishing can still be described as "hit or miss" for most of the smaller (12 to 29 ft) vessels. Without fathometers or nautical charts, the majority of fishermen utilizing smaller vessels often rely on land features for guidance to a fishing area. This type of fishing is inefficient and usually results in a lower catch-per-unit-effort (CPUE) in comparison with pelagic trolling. These fishermen tend to make multi-purpose trips—trolling on their way to reefs where they fish for shallow-water bottomfish and reef fish. Larger sized (30 ft and larger) vessels typically utilize Global Positioning System (GPS), fathometers, and electric reels, resulting in a more efficient operation. In addition, reef fishes are now commanding a consistently higher price than in previous years. This appears to be reflected in an

increased number of fishermen using small vessels focusing on reef and/or pelagic species over bottomfish.

**Table 7 Chronology of large vessel bottomfishing effort**

| Yr | Vessels fishing for shallow and deep-water bottomfish in the Northern Islands | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | Vessel 1 (65ft) | Vessel 2 (50ft) | Vessel 3 (50ft) | Vessel 4 (65ft) | Vessel 5 (45ft) | Vessel 6 (65ft) | Vessel 7 (70ft) | Vessel 8 70ft) |
| | Recreational deepwater charter | Com fishing vessel | Com fishing vessel | Com fishing vessel | Com fishing vessel | Com fishing vessel | Com fishing vessel | Personal use vessel |
| **1995** | Fished | Fished | | | | | | |
| **1996** | | Fished | Entered late | | | | | |
| **1997** | | Fished | Fished | Fished | | | | |
| **1998** | | Fished | Fished | Fished | | | | |
| **1999** | | Fished | Fished | | | | | |
| **2000** | | Fished | | | Entered late | | Entered late | Entered late |
| **2001** | | | | | Fished | Entered late | Fished | Fished |

Fishermen targeting the deep-water bottomfish, if successful, tend to fish for 1–4 years before leaving the fishery, whereas the majority of fishermen targeting shallow-water bottomfish tend to leave the fishery after the first year. The overall participation of fishermen in the bottomfish fishery tends to be very short term (less than 4 years).

In 1997, two vessels began fishing for bottomfish in the Northern Islands above FDM. In 1998, both ventures continued to fish in the Northern Islands with one continuing to target onaga and eight-banded grouper, while the other shifted to the red-gilled emperor (*L. rubrioperculatus*). Another of these vessels fished the entire year in the Northern Islands, targeted onaga, eight-banded grouper and red-gilled emperor. By the end of 1999, two of the three bottomfish fishing vessels left the fishery. Four vessels have entered the fishery since late 2000, with two vessels occasionally targeting sharks (M. Trianni, CNMI-DFW, pers. comm.).

In 2004, a project was begun to re-establish a fishing station on Alamagen Island in the Northern Islands. A community had existed on Alamagen, but was evacuated in the 1970s due a volcanic eruption. It was intended resettled inhabitants would sell fish to buyers on Saipan and become a self sufficient. This venture failed primarily due to bad weather and a lack of adequate docking facilities on the island. Fishing recommenced on Alamagen March 2006. There is also some

subsistence fishing on Pagan and Agrihan. (Ogomoro, Council Island Coordinator, pers. comm. 2006).

Domestic US, joint-venture, and foreign vessels continue to inquire about full-time bottomfish fishing throughout much of the CNMI. The impact of these ventures on the commercial market is still unclear despite a fish-market assessment study conducted in 1994, and completed in late 1996. The results of this study did not correspond with the significant increase in the northern islands bottomfish harvest.

**Research and Findings**

The Resource Assessment Investigation of the Mariana Archipelago (RAIOMA) of 1982-1984 assessed the bottomfish resources of the CNMI (Polovina et al. 1985). These studies resulted in several publications describing the bottomfish complexes and included yield assessments for the 22 islands and banks sampled. Sampled areas were divided into three bank types; seamounts, Northern Islands and Southern Islands. Gindai (*Pristopomoides zonatus*), yellowtail kalekale (*Pristopomoides auricilla*) and ehu (*Etelis carbunculus*) accounted for 79.1% of the total catch from all areas. The overall catch per unit of effort (CPUE, effort defined as a line-hour, which is one hour of fishing with one line in the water) for the Northern and unexploited Southern Islands were approximately the same (3.19 fish/line-hour and 3.36 fish/line-hour, respectively), while the inhabited Southern Islands had an average CPUE of 1.76 fish/line-hour. The seamount banks appeared to support a higher standing stock with an average CPUE of 4.68 fish/line-hour. Based on catch rates and total fishable area, the report estimated that 39% of the maximum sustainable yield (MSY) for the CNMI could come from the Southern Islands, 56% from the Northern Islands and 5% from the Western Seamounts. A total annual sustainable yield of the shallow and deep-water complexes was estimated at 84 MT.

The redgill emperor, *L. rubrioperculatus*, is specifically targeted and constitutes a large percentage of the total bottomfish catch for some of the areas. Research on the redgill emperor, including a tagging study, began in May of 1998. By December, 650 redgill emperors had been tagged. In addition, parameter estimations (e.g., CPUE, size structure and size at sexual maturity) for near-virgin populations are being determined in Guam with assistance from NMFS (D. Hamm, PIFSC, pers. comm.). This would help establish spawning potential ratio (the ratio of the current spawning stock to the spawning stock prior to fishing activity) for this important species. The data collection for this project is complete, the data are entered and analysis is in process. The study focused on a virgin bank, (Bank A) a highly-exploited bank (Galvez Bank) and a third semi-exploited bank (White Tuna Bank). Data from the creel surveys (fishermen's CPUE) were compared to the research data from Galvez bank, and used to adjust the CPUE for the virgin bank as a proxy to estimate virgin fishery CPUE.

The DFW recently finished a report on the life history of this species as well (Trianni 2000). A total of 5,730 redgill emperors were collected and analyzed between August 1997 and September 2000. Data was collected to determine CPUE, length-frequency, seasonality of spawning and size at maturity. Fish were measured and weighed and gonads were also weighed. Spawning potential ratio can be estimated from the combination of this information. As this species is the

primary target of the CNMI shallow-water complex due to its high abundance and high price, it can be used as an indicator species for the fishery.

Data collection occurs primarily through the Commercial Purchase Database (CPD). This is a voluntary program in which all buyers of fish are requested report the weight of each species of fish purchased, the date, fisher's and dealer's names and price per pound by submitting invoices. Trip tickets are completed by fish buyers and submitted to DFW personnel. These data are considered reliable since 1983. However, as non-DFW personnel are relied upon to identify the species, many times the bottomfish are lumped into broad categories. Catch and effort are tracked via a "trip ticket", which is generally assumed to be a one day fishing trip. This works for the skiffs which take one day trips and sell all of their catch to a single buyer, but not for the commercial vessels where effort is more variable and sales may be handled through several buyers. Throughout the 1990s, estimated average total annual landings were 404,000 and 240,000 lb for all non-commercial and commercial fishermen, respectively. The majority of these are reef fish which are completely managed by the CNMI management authorities. Even though 85-90% of the fish caught by fishermen participating in the DFW "trip ticket" system are reported, roughly 50% of the commercially-sold, near-shore, shallow-water bottomfish complex is believed to go unreported.

Inshore and offshore creel surveys of fishermen returning to Saipan harbor were conducted during the 1980s and 1990s. While the inshore creel survey was developed to compliment the offshore survey, it was officially suspended in 1997 due to data problems, including surveying only vessels which had fished for pelagics. The inshore surveys were discontinued in 1995 and re-implemented in 2005. The offshore survey samples boat-based fishing activity. Until recently, these surveys were limited to Saipan where fishing effort and fish demand are highest. Data collection efforts have been concentrated at three boat ramps on the leeward side of the island. The offshore creel survey was re-implemented in April 2000.

In response to a growing commercial fishery in the Northern islands, an offshore bottomfish monitoring program developed separately. This program, ongoing since 1995, samples the large vessels active in the Northern Islands bottomfish fishery. These data are stored in the Northern Islands Bottomfish System (NIBS) developed by the Western Pacific Fishery Information Network (WPacFIN). Due to the differences in fishing methods between the traditional small vessels and the larger commercial vessels, the DFW began collecting data directly from the large vessels. Since its inception in 1995, trips have been sampled monthly with vessels participating on a voluntary basis. The NIBS also allows for separate analysis of the CPUE for this fishery from the overall CPUE.

In the first year of the survey, fish were identified to species, measured and weighed. Specific fishing locations were recorded from the vessel float plan and effort (in line-hours) was obtained from the captain. Since then, data on gross weight and total numbers for each species have been recorded. These raw data were used to obtain equilibrium and dynamic spawning potential ratios, length-weight estimates, size frequencies, CPUE and species composition in percentage of total numbers and weights of fish. The data could also be used as a template for future analyses of lightly exploited stock SPR. This data is summarized in a report from the DFW (Trianni

1998a). The data from the DFW survey differ from the RAIOMA survey as DFW data are separated by banks and islands while the RAIOMA survey grouped the data into Northern Islands and banks, Southern Islands and banks and the western seamounts. Conclusions from the Trianni report state that the Northern Island bottomfish fishery would probably expand in the coming years and that the banks should be managed on an individual basis due to their relative isolation from each other and to ensure that local depletion events do not occur.

## Current Statistics: Figures, Interpretations, Calculations, and Tables

The following section is excerpted from the *Bottomfish and Seamount Groundfish Fisheries of the Western Pacific Region: 2004 Annual Report.* It represents the best available information on the CNMI bottomfish fishery, past and present (WPRFMC 2005).

**Table 8. Historical Annual Statistics for CNMI Bottomfish**

| Year | Landings Total (Lbs) | CPUE (Lbs/Trip) | CPI | CPI Adjusted Revenue ($) | CPI Adjusted Price ($/Lb) | Number of Fishermen |
|---|---|---|---|---|---|---|
| 1983 | 28,529 | 43 | 140.90 | 97,052 | 3.40 | 90 |
| 1984 | 42,664 | 70 | 153.20 | 131,265 | 3.08 | 101 |
| 1985 | 40,975 | 117 | 159.30 | 117,717 | 2.87 | 62 |
| 1986 | 29,911 | 104 | 163.50 | 93,538 | 3.13 | 55 |
| 1987 | 49,715 | 169 | 170.70 | 142,838 | 2.87 | 46 |
| 1988 | 47,313 | 181 | 179.60 | 130,336 | 2.75 | 28 |
| 1989 | 24,438 | 73 | 190.20 | 73,965 | 3.03 | 31 |
| 1990 | 12,927 | 81 | 199.33 | 42,354 | 3.28 | 33 |
| 1991 | 7,093 | 47 | 214.93 | 25,281 | 3.56 | 19 |
| 1992 | 10,598 | 59 | 232.90 | 30,877 | 2.91 | 36 |
| 1993 | 18,461 | 84 | 243.18 | 52,235 | 2.83 | 20 |
| 1994 | 25,469 | 74 | 250.00 | 76,905 | 3.02 | 32 |
| 1995 | 36,101 | 93 | 254.48 | 128,991 | 3.57 | 34 |
| 1996 | 66,387 | 119 | 261.98 | 230,216 | 3.47 | 71 |
| 1997 | 64,143 | 137 | 264.95 | 217,078 | 3.38 | 68 |
| 1998 | 59,022 | 148 | 264.18 | 206,111 | 3.49 | 50 |

| 1999 | 55,991 | 156 | 267.80 | 204,633 | 3.65 | 53 |
|---|---|---|---|---|---|---|
| Year | Landings Total (Lbs) | CPUE (Lbs/Trip) | CPI | CPI Adjusted Revenue ($) | CPI Adjusted Price ($/Lb) | Number of Fishermen |
| 2000 | 45,258 | 56 | 273.23 | 128,120 | 2.83 | 72 |
| 2001 | 71,256 | 68 | 271.01 | 218,462 | 3.07 | 74 |
| 2002 | 46,765 | 101 | 271.55 | 135,146 | 2.89 | 53 |
| 2003 | 41,903 | 89 | 268.92 | 120,315 | 2.87 | 58 |
| **2004** | **54,452** | **104** | **271.28** | **142,260** | **2.61** | **43** |
| Average | 39,971 | 99 | | 124,804 | 3.12 | 51 |
| Standard Deviation | 18,467 | 39 | | 61,609 | 0.31 | 22 |

**Interpretation:** Taken as a whole, the number of pounds of bottomfish sold (landings) increased in 2004 by 30% from that of 2003. In part, this may be explained by an increase in landings of shallow-water bottomfish, mostly emperors. A majority of the larger vessels conducting deep-water bottomfish fishing did not fish in the northern islands in 2004. And for 2004, the number of fishermen landing bottomfish in the CNMI has dropped to below the 22-year mean.

Bottomfish that were categorized simply as “assorted bottomfish” were the largest portion of the landings until 1995. Since 1995, deep-water bottomfish have been the largest portion of the catch, with shallow-water bottomfish becoming the second largest portion of the catch in 1996, and remaining there through 2003. In 2003, “assorted bottomfish” accounted for 15.6% of the landings. This reflects the use of the new sales invoice forms, with more species specifically listed. The use of the category “assorted bottomfish” will likely continue, because the diversity of the catch is great and many buyers sell these species as “assorted bottomfish,” so there is little perceived need to identify them more completely. However in 2004, shallow water bottomfish comprised the majority of the landings. This is probably due to restrictions on sea conditions, allowing the small fishing vessels to fish close to the islands for shallow-water bottomfish and the lack of fishing effort by the larger northern islands fishing vessels.

Deep-water bottomfish landings increased significantly in 1995 and remained fairly high until 2001. This was likely the result of an increase in the number of large vessels participating in the deep-water bottomfish fishery that are capable of fishing the islands and banks north of Farallon de Medinilla. Note however, that deep-water bottomfish are still caught near Saipan. Since 2001 sea conditions industry also has a high turnover, but differs from the mafute' in that successful onaga fishermen often participate for more (1 to 4) years. Landing of grouper primarily (*E. octofasciatus*, but almost

**Figure 2. Commercial bottomfish landings, allocated to sector of the fishery (or categorized as "assorted bottomfish").**

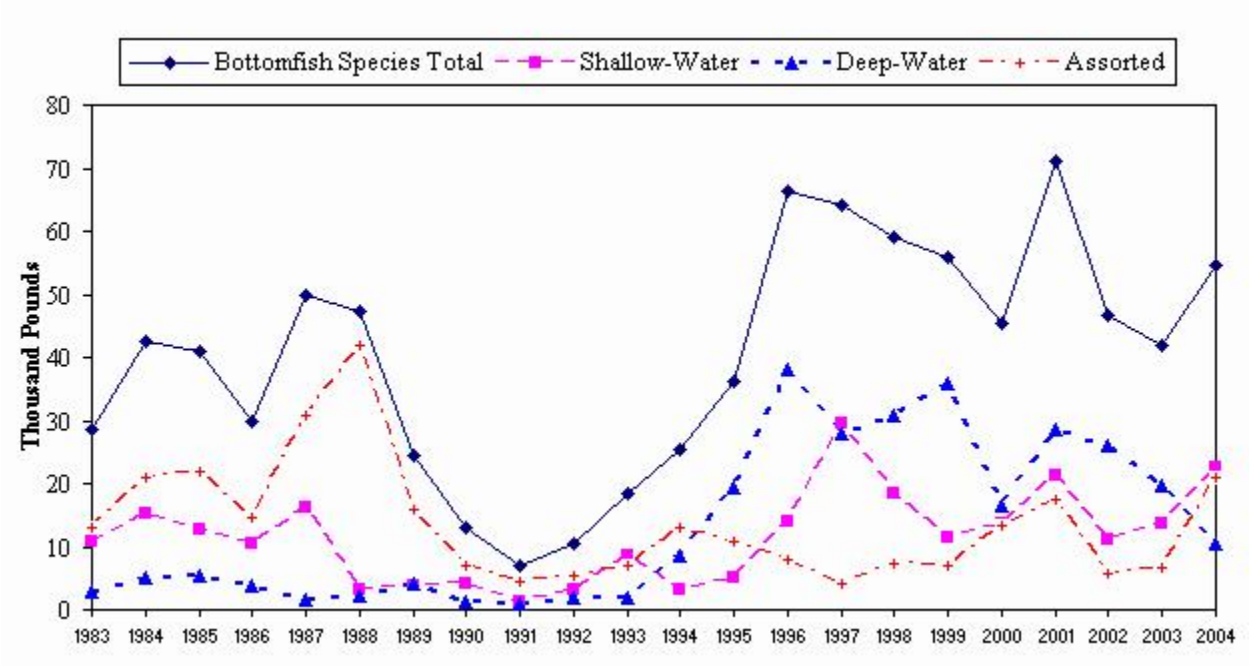



**Figure 3. Commercial bottomfish landings of deep-water species.**

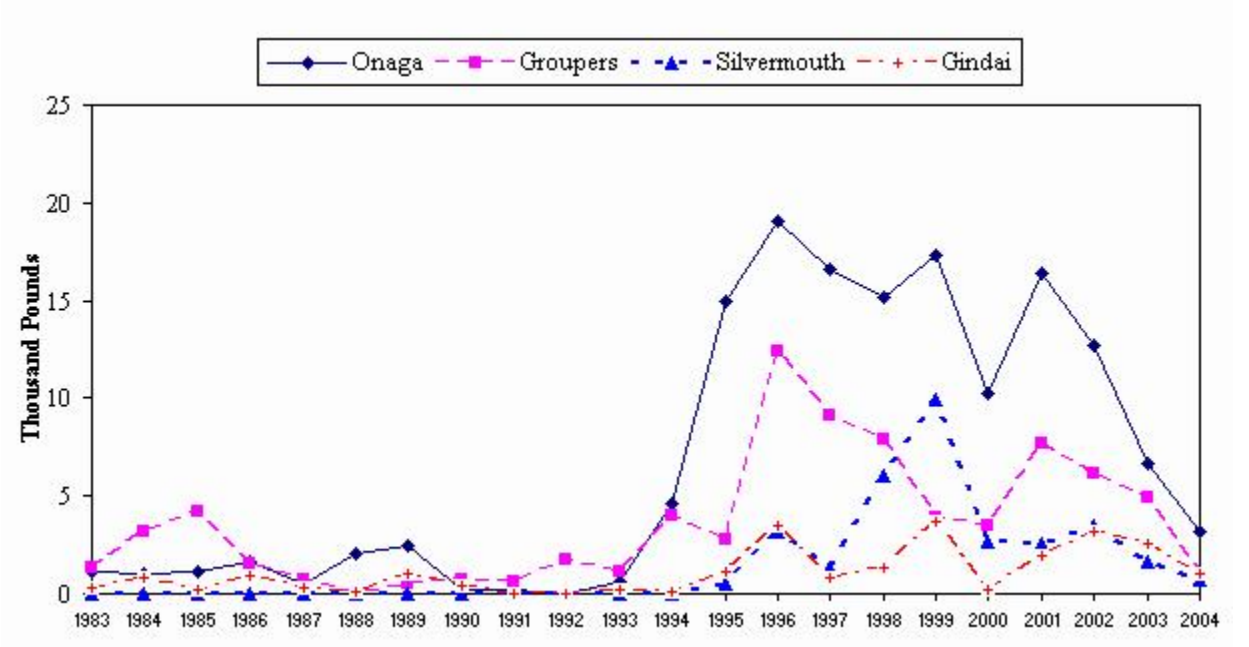
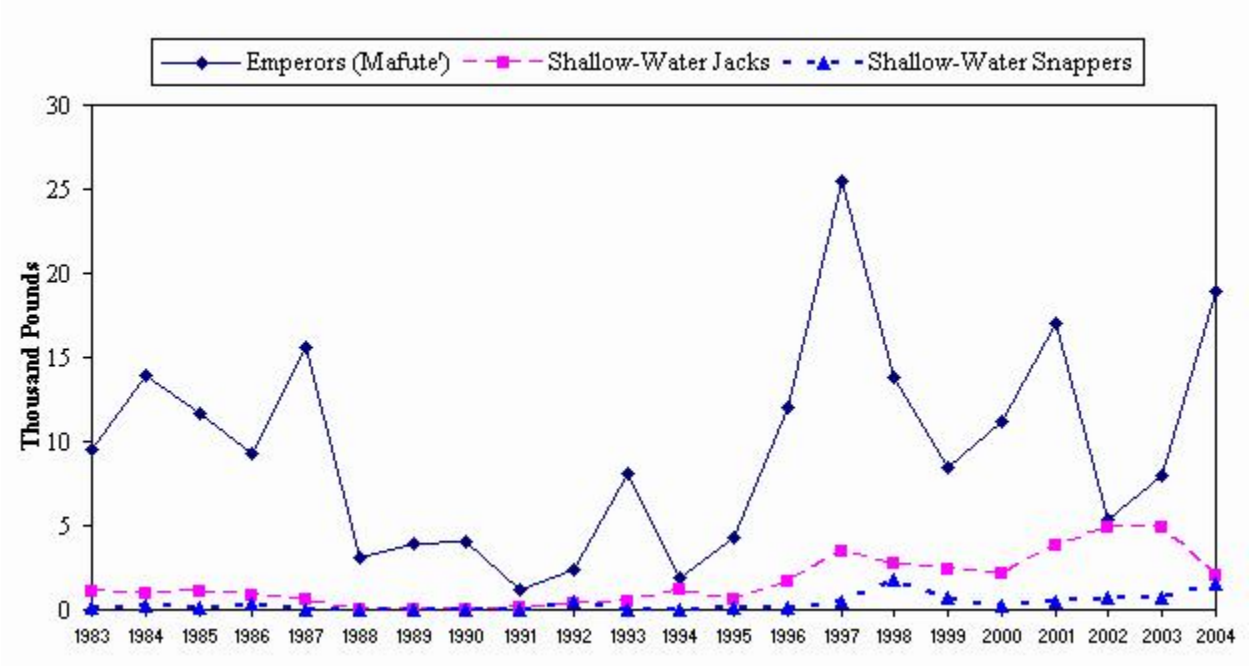


**Figure 4. Commercial bottomfish landings of shallow-water species.**




certainly including shallow-water Bottomfish MUS species such as *Variola louti* and *E. fasciatus*) have varied widely over the last 10 years with a 20.3% decrease in landings in 2002 from 2001, 21.6% decrease in landings in 2003 and sharper decrease of 78% in 2004. Silvermouth (*Aphareus rutilans*) have been reported since 1995, and landings have fluctuated considerably. Landing for 2004 were below the 22 year mean. Opakapaka (*Pristipomoides zonatus*, and likely some *P. flavipinnes*) landings have varied somewhat in the last 10 years, with the 2004 landings decreasing by 62%. Ehu (*E. carbunculus*) landings increased 56% from last year. Ehu are commonly caught around Saipan by the smaller fishing vessels. Kalikali (*Pristipoimoides auricilla* and *P. sieboldii*) appeared in the sales invoice for the first time in 2002.

The number of pounds of shallow-water bottomfish commercially sold (landings) appeared to peak between 1996 and 2001. It is likely that there was a comparable peak in landings between 1984 and 1987, but this result is difficult to discern because of the large number of bottomfish that were categorized as "assorted bottomfish" during the earlier period. The landings of emperor (mafute' of the family Lethrinidae) have experienced large fluctuations over the last 20 years, and particularly over the last 8 years. In 2002, the number of pounds of mafute' commercially sold, fell below the 20-year mean to the lowest level since 1995. In 2003, the number of pounds of mafute' landed increased slightly, but is still below the 21-year mean. 2004 mafute' landings increased by 136% from 2003. The landings of jacks fished in shallow areas (itemized as "jacks," amberjack [*Seriola dumerili*], giant trevally [*Caranx ignobilis*], brassy trevally [*C. papuenis*], and black jack [*C. lugubris*] on the

sales invoices) appears to have slowly increased over the last 10 years, with the highest landings reported in 2003. Landings of jacks were only 0.57% higher (28 lb greater) in 2003, than in 2002 but decreased tremendously in 2004 by 87%. This is likely related to the decrease in the amount of the landings from the northern islands bottomfish fishing fleet. The category "jacks" may include any carangids sold, including BMUS species, as well as *Carangoides orthogrammus, Caranx melampygus, C. papuensis,* and *C. sexfasciatus*. Landings of amberjack were higher in 2004 than for any previous years. Giant trevally and black jack were reported in 2002 for the first time and brassy trevally was reported in 2003 for the first time, both likely as a result of being added to the new sales invoice. Jobfish (*Aprion virescens*) have been reported in 8 of the last 20 years, and in 2004 landings were the highest ever reported surpassing the previous year by 100%. Landings of blueline snapper (*Lutjanus kasmira*) and Humpback snapper (*Lutjanus gibbus*) were much higher than last year, but this species is often lumped within assorted reef fishes.

Bottomfish MUS that were specifically itemized on the sales receipts (and including emperors, the vast majority of which are Bottomfish MUS species *L. rubrioperculatus*) increased from 1983 through 1987. They then dropped to a low in 1991 and generally climbed again through 2001. The reported landings of BMUS species decreased in 2002 by 28.3%, and decreased a further 14.3% in 2003, however landings in 2004 increased by 29% remaining above the 22-year mean.

This report only represents the commercial fishery as reported on sales invoices in the CNMI. Charter vessels that do not sell their catch and recreational/subsistence catches are not included here.

**Calculation:** 2004 annual summaries for each species from sales invoice datasheets are totaled and then inflated by 30% to represent the CNMI as a whole (assuming 60% coverage of the commercial sales on Saipan and that Saipan is 90% of the market).

Table 9 below shows commercial landings (pounds) for 1) all bottomfish, 2) all bottomfish MUS species identified to species level on invoices, 3) all shallow-water bottomfish, 4) all deep-water bottomfish, and 5 selected deep-water bottomfish. (btm: Total bottomfish; bmus: Total bmus: BMUS species; btm_s: All shallow-water bottomfish; btm_d: All deep-water bottomfish; onaga: Onaga; grpr_d: Grouper; lehi: Silvermouth; paka: Opakapaka; gindai: Ginadai; ehu: Ehu; and kali: Kalikali).

**Table 9 Commercial landings (lbs) of Bottomfish**

| year | btm | bmus | btm_s | btm_d | onaga | grpr_d | lehi | paka | gindai | ehu | kali |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1983 | 28,529 | 3,407 | 10,762 | 2,748 | 1,118 | 1,363 | 0 | 2,022 | 267 | 0 | 0 |
| 1984 | 42,664 | 3,463 | 15,089 | 4,965 | 1,026 | 3,141 | 0 | 1,639 | 798 | 0 | 0 |
| 1985 | 40,975 | 2,223 | 12,855 | 5,535 | 1,117 | 4,210 | 0 | 681 | 208 | 0 | 0 |
| 1986 | 29,912 | 3,822 | 10,431 | 3,965 | 1,598 | 1,494 | 0 | 987 | 874 | 0 | 0 |
| 1987 | 49,715 | 1,889 | 16,176 | 1,464 | 472 | 721 | 0 | 1,146 | 271 | 0 | 0 |
| 1988 | 47,313 | 2,413 | 3,078 | 2,086 | 2,001 | 0 | 0 | 326 | 85 | 0 | 0 |
| 1989 | 24,438 | 4,021 | 3,963 | 4,046 | 2,478 | 563 | 0 | 538 | 1,006 | 0 | 0 |
| 1990 | 12,927 | 1,273 | 4,021 | 1,348 | 253 | 703 | 0 | 628 | 393 | 0 | 0 |
| 1991 | 7,093 | 781 | 1,387 | 804 | 175 | 629 | 0 | 606 | 0 | 0 | 0 |
| 1992 | 10,598 | 607 | 3,125 | 1,794 | 21 | 1,773 | 0 | 136 | 0 | 0 | 0 |
| 1993 | 18,461 | 1,722 | 8,537 | 1,971 | 593 | 1,146 | 0 | 898 | 232 | 0 | 0 |
| 1994 | 25,470 | 5,476 | 3,055 | 8,589 | 4,578 | 3,953 | 0 | 824 | 58 | 0 | 0 |
| 1995 | 36,102 | 17,736 | 5,043 | 19,261 | 14,910 | 2,715 | 521 | 1,019 | 1,114 | 0 | 0 |
| 1996 | 66,388 | 32,446 | 13,839 | 38,133 | 19,093 | 12,409 | 3,179 | 6,570 | 3,452 | 0 | 0 |
| 1997 | 64,144 | 22,133 | 29,452 | 27,913 | 16,631 | 9,086 | 1,375 | 2,780 | 821 | 0 | 0 |
| 1998 | 59,023 | 27,593 | 18,278 | 30,665 | 15,158 | 7,864 | 6,028 | 2,729 | 1,295 | 197 | 124 |
| 1999 | 55,991 | 34,648 | 11,464 | 35,750 | 17,351 | 3,901 | 9,986 | 1,772 | 3,686 | 821 | 6 |
| 2000 | 45,258 | 14,968 | 13,582 | 16,592 | 10,199 | 3,474 | 2,659 | 1,633 | 214 | 45 | 0 |
| 2001 | 71,256 | 25,264 | 21,195 | 28,625 | 16,358 | 7,719 | 2,585 | 3,951 | 1,916 | 8 | 0 |
| 2002 | 46,766 | 24,518 | 11,003 | 26,113 | 12,655 | 6,149 | 3,479 | 3,932 | 3,157 | 263 | 410 |
| 2003 | 41,904 | 17,988 | 13,567 | 19,549 | 6,649 | 4,906 | 1,624 | 2,262 | 2,550 | 729 | 3,090 |
| **2004** | **54,452** | **12,849** | **22,403** | **10,369** | **3,138** | **1,073** | **737** | **849** | **1,042** | **1,137** | **3,242** |
| Average | 39,972 | 11,874 | 11,468 | 13,286 | 6,708 | 3,591 | 1,462 | 1,724 | 1,065 | 145 | 312 |
| Standard Deviation | 18,467 | 11,492 | 7,275 | 12,706 | 6,997 | 3,277 | 2,491 | 1,526 | 1,159 | 319 | 928 |

Table 10 below presents commercial landings (lbs) of fishes identified as assorted bottomfish and selected shallow-water bottomfish. (Btm_as: Assorted bottomfish; empr: Emperor (mafute'); jack_a: As jacks; amber: Amberjack; giant_j: Giant trevally; blk_jack: Black jack; uku: Jobfish; jack_s: All shallow water jacks; taape: Blueline snapper; and shallow-water snappers)

**Table 10 Commercial landings (lbs) of bottomfish**

| year | btm_as | empr | jack_a | amber | giant_j | brass_j | blk_jack | uku | jack_s | taape | snapr |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1983 | 12,998 | 9,555 | 1,031 | 0 | 0 | 0 | 0 | 0 | 1,031 | 0 | 175 |
| 1984 | 20,971 | 13,925 | 906 | 0 | 0 | 0 | 0 | 0 | 906 | 0 | 259 |
| 1985 | 21,904 | 11,676 | 962 | 135 | 0 | 0 | 0 | 81 | 1,098 | 0 | 81 |
| 1986 | 14,528 | 9,250 | 818 | 0 | 0 | 0 | 0 | 363 | 818 | 0 | 363 |
| 1987 | 30,929 | 15,568 | 607 | 0 | 0 | 0 | 0 | 0 | 607 | 0 | 0 |
| 1988 | 41,823 | 3,078 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1989 | 15,891 | 3,963 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1990 | 6,931 | 4,021 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1991 | 4,296 | 1,212 | 175 | 0 | 0 | 0 | 0 | 0 | 175 | 0 | 0 |
| 1992 | 5,543 | 2,338 | 337 | 0 | 0 | 0 | 0 | 450 | 337 | 0 | 450 |
| 1993 | 7,055 | 8,083 | 454 | 0 | 0 | 0 | 0 | 0 | 454 | 0 | 0 |
| 1994 | 13,002 | 1,870 | 1,169 | 0 | 0 | 0 | 0 | 16 | 1,169 | 0 | 16 |
| 1995 | 10,779 | 4,276 | 596 | 0 | 0 | 0 | 0 | 171 | 596 | 0 | 171 |
| 1996 | 7,846 | 11,990 | 1,697 | 0 | 0 | 0 | 0 | 152 | 1,697 | 0 | 152 |
| 1997 | 3,998 | 25,445 | 3,482 | 0 | 0 | 0 | 0 | 526 | 3,482 | 0 | 526 |
| 1998 | 7,351 | 13,853 | 2,362 | 317 | 0 | 0 | 0 | 1,746 | 2,679 | 0 | 1,746 |
| 1999 | 7,004 | 8,419 | 2,019 | 343 | 0 | 0 | 0 | 683 | 2,363 | 0 | 683 |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 | 13,451 | 11,223 | 2,142 | 28 | 0 | 0 | 0 | 190 | 2,169 | 0 | 190 |
| 2001 | 17,485 | 16,987 | 3,761 | 21 | 0 | 0 | 0 | 425 | 3,782 | 0 | 425 |
| 2002 | 5,718 | 5,364 | 4,584 | 184 | 48 | 52 | 0 | 389 | 4,868 | 352 | 771 |
| 2003 | 6,526 | 7,999 | 3,685 | 322 | 26 | 725 | 138 | 597 | 4,896 | 75 | 672 |
| **2004** | **20,831** | **18,889** | **477** | **488** | **91** | **27** | **931** | **1,194** | **2,015** | **102** | **1,499** |
| Average | 13,494 | 9,499 | 1,421 | 84 | 8 | 37 | 49 | 317 | 1,597 | 24 | 372 |
| Standard Deviation | 9,413 | 6,240 | 1,375 | 148 | 22 | 154 | 199 | 443 | 1,521 | 78 | 476 |

**Table 11 Commercial landings of bottomfish, and associated revenues and prices for 2004**

| Species | Landings (Lbs) | Revenue ($) | Average Price ($/Lb) |
|---|---|---|---|

| | | | |
|---|---|---|---|
| Amberjack | 488 | 957 | 1.96 |
| Blackjack | 931 | 1,781 | 1.91 |
| Blueline Snapper | 102 | 331 | 3.25 |
| Bottomfish | 20,831 | 49,409 | 2.37 |
| Brassy Trevally | 27 | 55 | 2.00 |
| Ehu (red Snapper) | 1,137 | 3,406 | 3.00 |
| Emperor (mafute/misc.) | 18,889 | 51,140 | 2.71 |
| Giant Trevally | 91 | 250 | 2.75 |
| Gindai (flower Snap) | 1,043 | 3,105 | 2.98 |
| Grouper (misc.) | 1,073 | 3,172 | 2.96 |
| Jacks (misc.) | 477 | 1,216 | 2.55 |
| Jobfish (uku) | 1,194 | 2,252 | 1.89 |
| Kalikali (yellowtail) | 3,242 | 8,266 | 2.55 |
| Onaga (red Snapper) | 3,138 | 12,046 | 3.84 |
| Opakapaka (pink Snp) | 849 | 2,586 | 3.05 |
| Red Snapper | 204 | 407 | 2.00 |
| Silvermouth (deep Lehi) | 737 | 1,882 | 2.55 |
| **Total** | **54,452** | **142,260** | **2.61** |

**Interpretation:** The average price per pound decreased for all landings of bottomfish from $3.02/lb in 2003 to $2.61/lb in 2004, with the exception of assorted jacks (increased 28¢/lb), giant trevally (increased 25¢/lb), grouper (increased 38¢/lb), and onaga (increased 38¢/lb). Onaga commanded the best price this year, with only opakapaka, gindai, ehu, and blueline snapper within 50¢ per pound. Most fishes are sold as whole fish (and very few as filets or steaks). The larger species are often purchased by the hotel restaurants, which are now seeing far fewer customers and often importing fishes from outside the CNMI. In addition, the local public appears to show a greater demand for reef fishes. This report only represents the commercial fishery as reported on sales invoices in the

CNMI. Charter vessels that do not sell their catch and recreational/subsistence catches are not included here.

**Calculation:** Landings in pounds are from a simple database summation of reported purchases of each species of bottomfish. Total bottomfish landings sum across all bottomfish species. Revenue in dollars is from a simple summation of the value field. The landings and revenues values listed for 2004 are inflated by 30% to represent the CNMI as a whole (assuming 60% coverage of the commercial sales on Saipan and that Saipan is 90% of the market).

**Figure 5. Commercial bottomfish landings and inflation-adjusted revenue.**

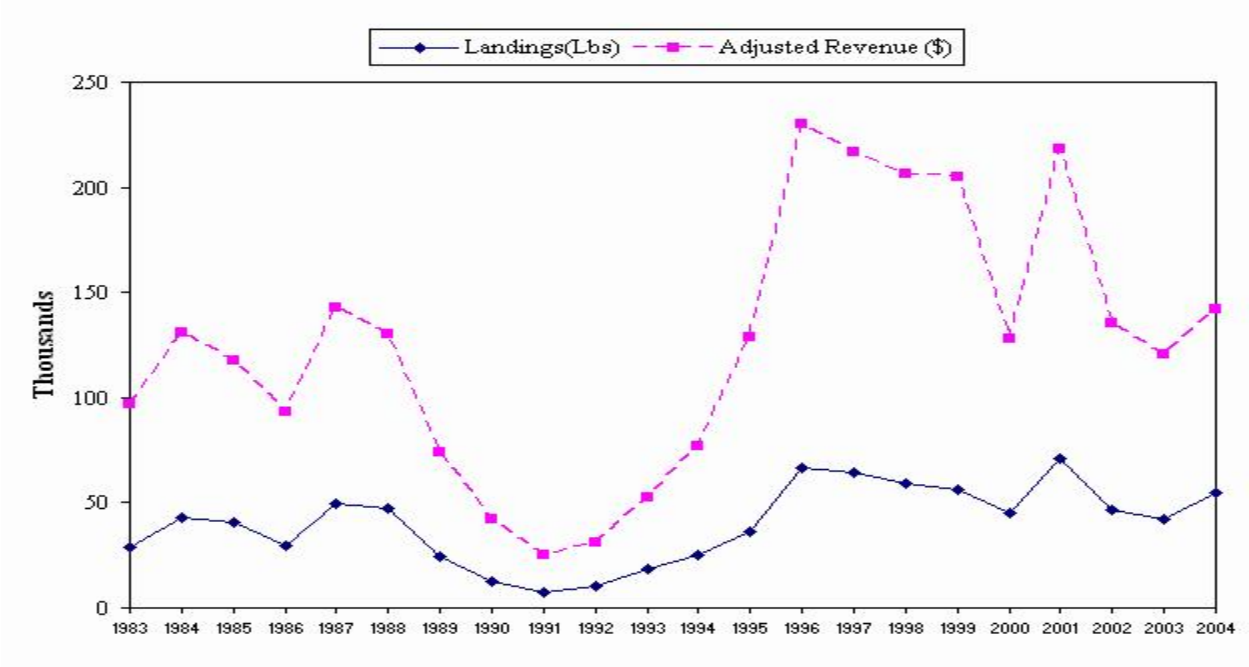
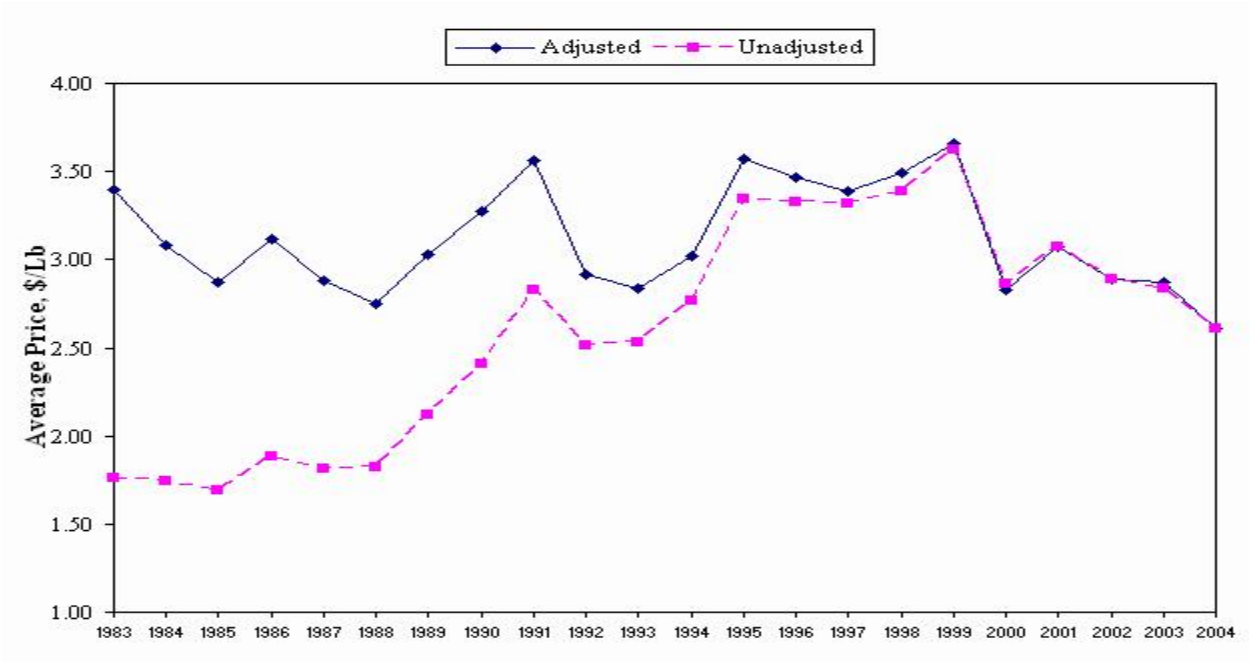


**Figure 6. Average price of bottomfish.**




**Interpretation:** Landings, revenues, and adjusted revenues for 2004 all rose above the 22-year mean. Although the landings, revenues, and adjusted revenues for bottomfish has been comparatively high for the last 9 years compared to the preceding 13 years, there have been considerable changes in the composition of the fishery during the last 9 years.

Inflation-adjusted bottomfish revenues recovered slightly from the marked decrease of 2000, but fell 12.3% from 2002. The inflation-adjusted revenue for 2003 is 4.2% below the 21-yr mean. The 2004 inflation-adjusted revenue increased 18% from last year. The bottomfish fishery has always been a small proportion of the total fisheries, and it appears that bottomfish are now a relatively lower percentage of the trip revenue on trips where bottomfish were caught. Moreover, many of the fishermen catching mafute' do so locally, but appear to be increasing their focus on reef fishes. The bottomfish are a smaller portion of their sales and seem to be co-lateral catch (i.e., if caught in sufficient numbers while focusing on other species, then they too will be sold). Vessels capable of landing large amounts of onaga are usually larger vessels fishing the northern islands. The difficulty of maintaining the equipment, vessel, and crew to consistently and routinely make these trips successful appears to be difficult in the long term for fishermen in the CNMI, as seen by the loss of 4 of the 8 vessels from the fishery in 2003.

Prices for bottomfish were less in 2004 than in the past 3 years, with the adjusted average price per pound lower than the 22-yr mean for the last 4 years. 2004 marks the lowest adjusted average prices than any of the previous years. The unadjusted price is near the 22-yr mean. Bottomfish are not

commanding the high prices they once did however this may change due to increasing fuel costs. Local buyers seem to increasingly prefer reef fishes and reef fishes are commanding higher prices each year.

**Calculation:** The CNMI's consumer price index is computed by the CNMI Department of Commerce using the Laspeyres' formula. The CPIs for 1983–1987 were not available from the CNMI Department of Commerce and were, therefore, estimated by using Guam's annual inflation rate to proportionally adjust the 1988 CNMI CPI. The CNMI Department of Commerce "reset" the CPI to 1.00 for the 1st quarter of 2003, with the 3 subsequent quarters showing devaluation.

Revenue in dollars is from a simple summation of the value field. The average price for bottomfish is calculated by dividing the total revenue by the total landings. The inflation adjustment is made using the Consumer Price Index (CPI) and establishing the 2004 CPI figure as the basis by which calculations of previous years' prices are made.

**Table 12 Commercial landings, consumer price indices, revenues and prices for all bottomfish**

| Year | Landings Total (Lbs) | CPI | CPI Adjusted Factor | Unadjusted Revenue ($) | CPI Adjusted Revenue ($) | Unadjusted Price ($/Lb) | CPI Adjusted Price ($/Lb) |
|---|---|---|---|---|---|---|---|

| Year | Landings Total (Lbs) | CPI | CPI Adjusted Factor | Unadjusted Revenue ($) | CPI Adjusted Revenue ($) | Unadjusted Price ($/Lb) | CPI Adjusted Price ($/Lb) |
|---|---|---|---|---|---|---|---|
| 1983 | 28,529 | 140.90 | 1.93 | 50,286 | 97,052 | 1.76 | 3.40 |
| 1984 | 42,664 | 153.20 | 1.77 | 74,161 | 131,265 | 1.74 | 3.08 |
| 1985 | 40,975 | 159.30 | 1.70 | 69,245 | 117,717 | 1.69 | 2.87 |
| 1986 | 29,911 | 163.50 | 1.66 | 56,348 | 93,538 | 1.88 | 3.13 |
| 1987 | 49,715 | 170.70 | 1.59 | 89,835 | 142,838 | 1.81 | 2.87 |
| 1988 | 47,313 | 179.60 | 1.51 | 86,315 | 130,336 | 1.82 | 2.75 |
| 1989 | 24,438 | 190.20 | 1.43 | 51,724 | 73,965 | 2.12 | 3.03 |
| 1990 | 12,927 | 199.33 | 1.36 | 31,143 | 42,354 | 2.41 | 3.28 |
| 1991 | 7,093 | 214.93 | 1.26 | 20,064 | 25,281 | 2.83 | 3.56 |
| 1992 | 10,598 | 232.90 | 1.16 | 26,618 | 30,877 | 2.51 | 2.91 |
| 1993 | 18,461 | 243.18 | 1.12 | 46,638 | 52,235 | 2.53 | 2.83 |
| 1994 | 25,469 | 250.00 | 1.09 | 70,555 | 76,905 | 2.77 | 3.02 |
| 1995 | 36,101 | 254.48 | 1.07 | 120,552 | 128,991 | 3.34 | 3.57 |
| 1996 | 66,387 | 261.98 | 1.04 | 221,362 | 230,216 | 3.33 | 3.47 |
| 1997 | 64,143 | 264.95 | 1.02 | 212,822 | 217,078 | 3.32 | 3.38 |
| 1998 | 59,022 | 264.18 | 1.03 | 200,108 | 206,111 | 3.39 | 3.49 |
| 1999 | 55,991 | 267.80 | 1.01 | 202,607 | 204,633 | 3.62 | 3.65 |
| 2000 | 45,258 | 273.23 | 0.99 | 129,414 | 128,120 | 2.86 | 2.83 |
| 2001 | 71,256 | 271.01 | 1.00 | 218,462 | 218,462 | 3.07 | 3.07 |
| 2002 | 46,765 | 271.55 | 1.00 | 135,146 | 135,146 | 2.89 | 2.89 |
| 2003 | 41,903 | 268.92 | 1.01 | 119,124 | 120,315 | 2.84 | 2.87 |
| **2004** | **54,452** | **271.28** | **1.00** | **142,260** | **142,260** | **2.61** | **2.61** |
| Average | 39,971 | | | 107,945 | 124,804 | 2.60 | 3.12 |
| Standard Deviation | 18,467 | | | 66,964 | 61,609 | 0.62 | 0.31 |

**Figure 7. Number of fishermen (boats) making bottomfish landings.**

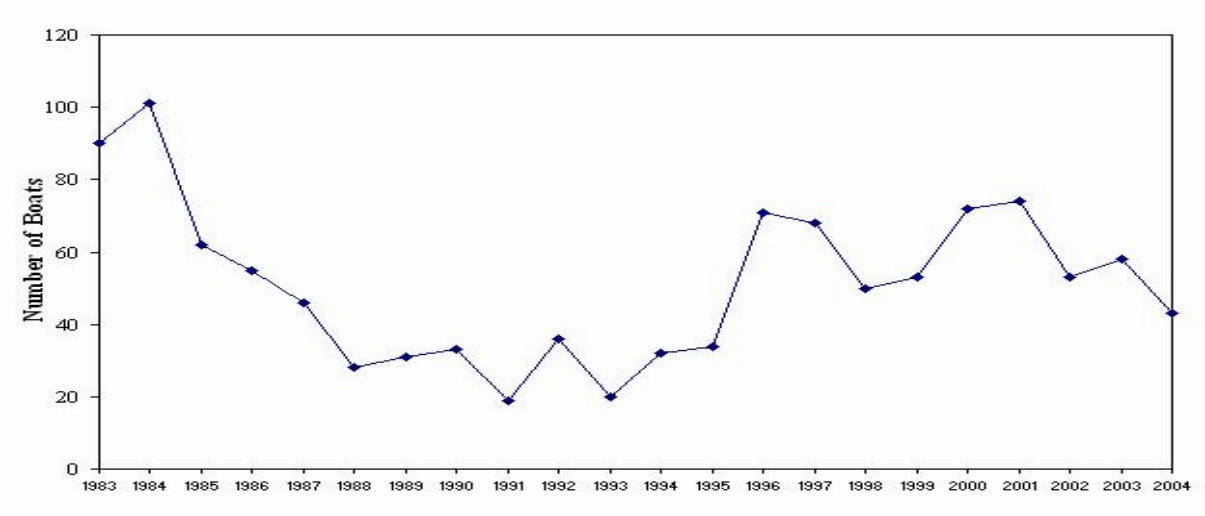



**Figure 8. Number of bottomfish trips.**

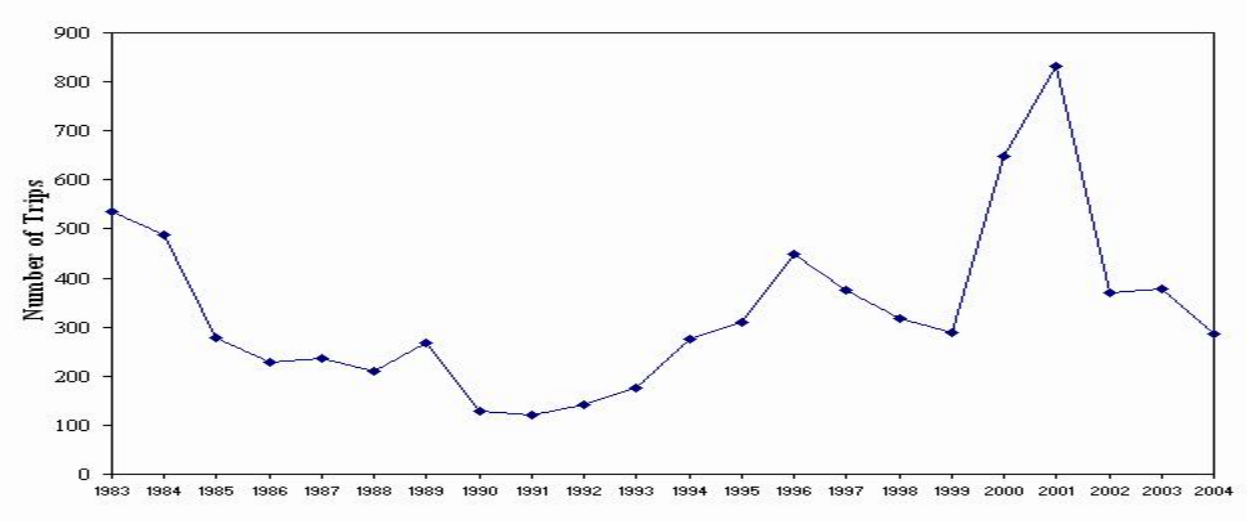



**Figure 9. Bottomfish catch in average pounds per trip.**

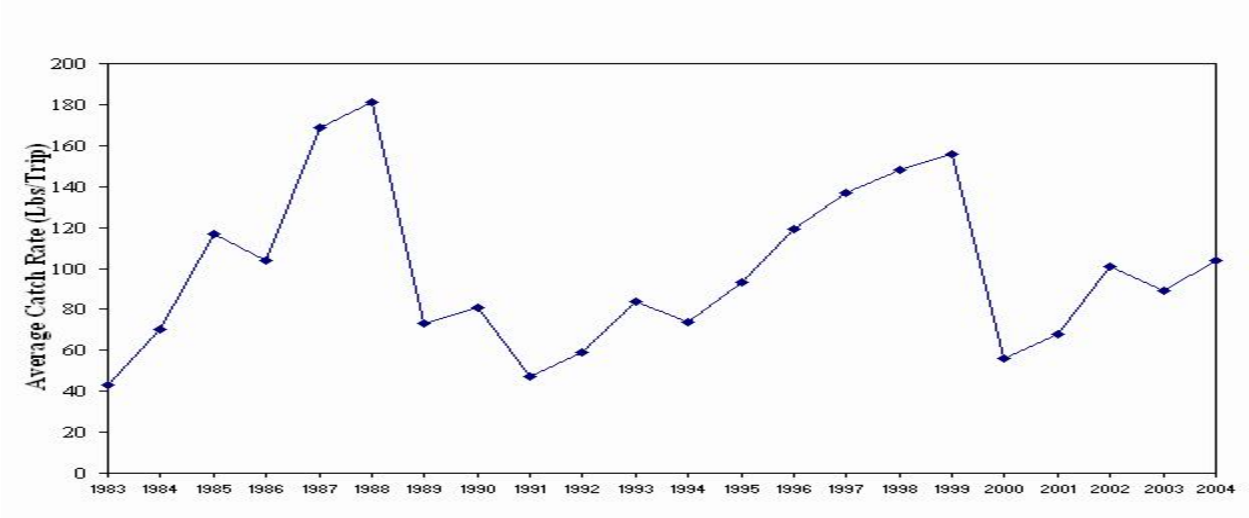
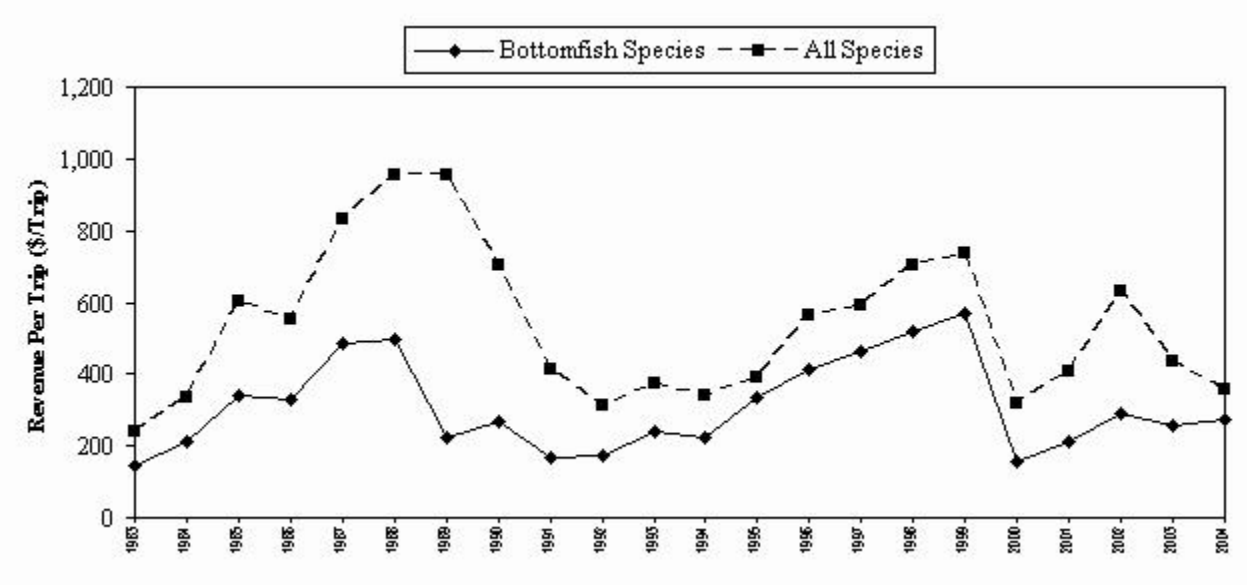



**Figure 10. Average inflation-adjusted revenue per trip landing bottomfish.**




**Interpretation:** The number of fishermen (used as a proxy for the number of boats) making commercial sales of any bottomfish species has varied widely over the last 22 years. This year there were less fishermen selling bottomfish than last year, but the number remains near the 22-year mean. Most of these fishermen are using small vessels and when catching bottomfish, are more likely to target the shallow-water species.

The number of bottomfish trips was high from 1983 through 1989 as a result of consistent fishing activity centered on the island of Farallon de Medinilla. This fishery subsequently largely ceased in 1990, resulting in a drop in bottomfish trips in the early 1990s. In 1994, consistent fishing activity in

the northern islands began once more and has continued to the present (although participation seems to be dropping this year). The number of bottomfish trips more than doubled in 2000 and 2001 to reach the highest levels in 18 years. During this time, more of the smaller vessels increased their focus on reef fishes, and although bottomfish were still being caught and sold, they were no longer the largest (or most valuable) part of the catch. This resulted in fishermen catching bottomfish as co-lateral catch on more trips. The number of trips decreased in 2002 and remained at this lower level in 2003 (near the 20-year mean), probably as a result of fewer fishermen focusing on catching bottomfish at all. The number of bottomfish fishing trips for 2004 decreased below the 22 year mean partly due to rough sea conditions through out the year and the decrease in participation or closure of vendors in the commercial sales invoice program.

The substantial increase in pounds of bottomfish sold per trip since the low in 1991 can be primarily attributed to the northern islands fishery, coincident with the increase in vessels making bottomfish trips, increased revenues, and annual landings during the next 8 years. The average pounds of bottomfish landed per trip in 2000 decreased 63.1% from 1999, and recovered slightly in 2001 and 2002. This year the average pounds of bottomfish sold per trip increased to 5% above the 22-year mean.

Although the average catch per trip is not a very good measure of CPUE, because it is subject to significant biases (e.g., changes in trip length and relative amounts of bottomfish fishing compared to trolling or reef fishing); it is the only measure readily obtained from the commercial purchase system. However, the smaller vessels commonly make mixed trips and the relative proportions of bottomfishes to pelagic and reef fishes are changing.

Inflation-adjusted bottomfish revenues recovered slightly from the marked decrease of 2000, although they were 13.0% lower in 2003 than in 2002, this year was higher by 7%. This year's revenues were 18% lower than the 22-year mean. This reflects the decrease in number of vessels fishing the northern islands, thereby decreasing the landings of the more valuable deep-water bottomfish.

This report only represents the commercial fishery as reported on sales invoices in the CNMI. Charter vessels that do not sell their catch and recreational/subsistence catches are not included here.

**Calculation:** The purchasers identify the fisherman or boats selling the catch on the sales invoices used when they purchase fishes from the fishermen. The "number of fishermen" is the number of unique fishermen selling their catch of bottomfish within a given year.

Adding each recorded fisherman's sales for each day tallies the number of trips that resulted in landing any bottomfish. This assumes that each fisherman lands only once in a given day, and that all of the catch is sold on that day. Most trips last a single day, but it is also known that the occurrence of longer fishing trips happens. These actions will cause this measure of trips to underestimate the fishing effort tallied here as trips.

The catch rate is calculated by dividing the total weight of all bottomfish landings by the number of trips that landed bottomfish. Bottomfish revenue per trip is the total revenue of the bottomfish sold from a trip. The revenue per bottomfish fishing trip for all species is the total revenue for all trips

that resulted in sales of any bottomfish. The inflation adjustment is made using the CPI and establishing the 2004 CPI figure as the basis by which calculations of previous years' prices are made.

**CNMI Crustaceans Fishery**

Lobsters around the CNMI do not appear to go into traps and, perhaps surprisingly, do not live in waters deeper than 13 m. The fishery primarily targets spiny lobster in near-shore waters with reported catch taken almost exclusively within the 0-3 nm zone of the inhabited Southern Islands, generally on reef flats by scuba or free diving. Beyond 3 nm, the topography in most locations drops off steeply. These lobster habitats are relatively small and access is difficult. In the Northern Islands on reef surrounding FDM, bottomfish fishermen anchored for the night occasionally dive for lobsters (CNMI-DFW 1997b). Anchoring and diving at FDM occurs exclusively within 3nm and most likely on the lee side within 100 yards of the land. This is primarily for personal consumption and does not appear in the CPD. The directed commercial fishery is relatively small, with annual landings of spiny lobsters between 2,000 and 4,000 lb since 1988 (CNMI-DFW 2002). However, unreported commercial and non-commercial catch could double this figure. It is possible that there may be exploratory fishing for lobster MUS on these offshore banks in conjunction with long-range bottomfish trips.

A second crustacean fishery undertaken in the 1990s is trapping for deep-water shrimp. Fishing has occurred on flat areas near steep banks at depths greater than 350 meters. This fishery has occurred mostly on grounds around Saipan and Tinian (Ostazeski 1997). Two fishing companies began fishing for deep-water shrimp in May of 1994. While three species of pandalid shrimp are known to occur at varying depths in the waters around CNMI (*Heterocarpus ensifer* (366 to 550 m), *H. laevigatus* (550 to 915 m) and *H. longirostris* (greater than 915 m), (Moffitt and Polovina 1987), the most commercially valuable and subsequently targeted is the largest species, *H. laevigatus*. Between May of 1994 and February of 1996, 12,160 kg of deep-water shrimp were landed. Of these, over 97% were *H. laevigatus* with the remainder being *H. ensifer*. Bycatch included a few deepwater eels (*Synaphobranchus spp.*) and dogfish sharks. A large number of two species of Geryonid crabs were also caught. The crabs are a marketable incidental catch and could contribute to the success of any deep-water shrimp fishery. Strong currents, rough bottom topography and the fishing depth all contribute to the potential for gear loss, which has been experienced by this fishery in the past.

Throughout the Pacific, deep-water shrimp fisheries have been sporadic in nature (Hastie and Saunders 1992). The reasons for this are manifold. Gear loss has been a common problem and made many past ventures unprofitable. A second difficulty is the short shelf life and a history of inconsistent quality, leading to fluctuating market demand for the product. Lastly, these fisheries require a great deal of exploratory fishing due to the patchiness of the target species which can lead to inconsistent catch rates. While other banks might have abundant stocks, unfamiliarity with them could lead to even greater gear loss. One of the CNMI ventures stopped fishing in June of 1995 after fishing a total of 193 days. The second venture began in December of 1995 and had fished 20 days by March of 1996 when non-CPD data collection ceased (Ostazeski, 1997). The first company cited loss of gear as the reason for exiting the fishery. They were using

oval plastic Fathom Plus traps which weighed 7 kg and experienced a trap loss of 3.5% per set with an average of 12.7 traps per string (range of 3 to 40 traps per string). The second company experienced no trap losses in 61 sets and 1561 traps deployed. Traps used by this company were lightweight with nylon netting. These traps weighed only 2.5 kg and if they became entangled on the bottom, they could tear away and still be recovered. Trap size was smaller and catch per trap was on average 76% of the plastic traps, but they were able to deploy many more traps per string without fear of gear loss. As the fishing grounds exploited are relatively close to Saipan and because neither vessel had freezer capabilities, shrimp were kept on ice for 12-48 hours before being brought to market.

Geryonid crabs have commercial value, with established directed fisheries in the Northeast Atlantic and off the coast of west Africa. The genus has been exploited at many locations in the Pacific as well. No information is available on the market for these crabs in Saipan.

Shrimp trapping was conducted at 22 islands and banks during the 2 year RAIOMA cruises. Depth and area distribution were determined for the three major species of pandalid shrimp. Average size, size at maturity, reproductive cycles and sex ratios were analyzed and determined. Growth and mortality were also calculated. From analysis of catch per unit effort, determination of suitable habitat and the above parameters, total biomass and sustainable yield were calculated. Moffitt and Polovina (1987) estimated 676.6 tons of *H. laevigatus* biomass and an exploitable sustainable yield of 162 tons per year for the combined EEZs of Guam and CNMI.

Data collection (via the CPD) occurs in the same manner as described for the bottomfish fishery. Because the lobster fishery is relatively small, it is believed that 50% of the total catch is unreported, due to personal consumption or that the catch was very small. Landings of lobster from the JQC Fishing Company Northern Islands operation were monitored by DFW during a seven month period in 1995, during which time a total of 380 lobsters of unknown species were collected from 13 trips (WPRFMC 1997).

The DFW conducted a data collection project specifically for the deep-water shrimp fishery between May of 1994 and June of 1995. Catch and effort data was gathered for both types of traps, as well as bycatch data. Depth ranges for the fishery as well as depth of greatest abundance were recorded. Sex ratios and reproductive cycles were determined from 1,533 *H. laevigatus* examined (Ostazeski 1997). Research has also been conducted to create a depletion model which would estimate catchability and would help determine the commercial viability of this fishery. It is likely that much shrimp went directly to an export market and was not caught by the CPD.

**CNMI Precious Corals Fishery**

Very little is known about the presence of precious corals in the waters around the CNMI. The amount of habitat where precious corals can grow is limited throughout the archipelago because of the steep topography. Black coral grows in relatively shallow waters of 30-100 meters, while

pink, gold and bamboo coral grows in deeper waters of 300 to1500 meters (Grigg 1993). Thus, precious corals could theoretically exist in both the near-shore waters (0 to 3 nm) as well as in the offshore (3 to 200 nm) waters.

Reports of a fishery from pre-World War II suggest that large quantities of high quality *Corallium spp.* were taken in waters north of Pagan Island (Takahashi 1942; as cited in Grigg and Eldredge 1975). Since then, no documented precious coral fishery has occurred within the EEZ of CNMI. Poaching has occurred within other areas of the Pacific US EEZ in recent years.

Because there are no known beds around CNMI, the FMP management measures which would apply to CNMI waters would be the same as those in place for other exploratory areas. Specifically, precious coral harvesters would require a CNMI exploratory area permit which has a 1,000 kg annual quota for all precious coral species, must report their harvest, use only selective gear and abide by minimum size restrictions as outlined in the FMP.

During the 1970s, surveys for precious coral in the waters surrounding CNMI were performed (Grigg and Eldridge 1975). The study focused on the presence of pink and red corals (*Corallium spp*.) and black coral (*Antipathes spp*.). Very little precious coral resources were found in these surveys. Much research has also been done on precious coral growth, recruitment and spawning potential at the University of Hawaii. This research has helped to determine sustainable harvest levels for the various species of coral. Due to their generally remote locations, the FMP has been written with the understanding that the Council would depend primarily on industry to find new coral beds and to assess the density and size of these beds. By combining growth and recruitment data to this, harvestable yields can be determined.

## PRIA

The operator of any vessel landing marine life in Hawaii for commercial purposes must obtain a commercial marine license from, and submit monthly catch reports to, the Hawaii Division of Aquatic Resources. This includes vessels that have fished in the PRIA. The form requires entries for day and area fished, type of gear used and species specific total numbers and total weight landed. The state has a cooperative agreement with NMFS for data sharing, which it does after checking the forms for completeness. There are no other reporting requirements that would apply to domestic vessels fishing for bottomfish or crustaceans around the PRIA, and therefore, if the catch is not landed in Hawaii, data would not necessarily be gathered or transmitted to NMFS.

### PRIA Bottomfish Fishery

Most of the PRIA are protected both by their isolation as well as through their status as National Wildlife Refuges. Nevertheless, nearshore fishing is popular among the resident populations at Johnston Atoll and Wake Island. The catch at these locations is primarily surgeonfish, goatfish, rudderfish, wrasses, parrotfish and soldierfish (Irons et al. 1990). Several outbreaks of ciguatera have been reported on Johnston which has been attributed to dredging operations. This has limited the take of fish for food, although catch and release is still common.

In 1998, two Hawaii-based troll and handline vessels, and one demersal longline vessel targeting sharks, fished in the EEZ around Palmyra and Kingman Reef. These vessels targeted both pelagic and bottomfish species, including yellowfin and bigeye tuna, wahoo, mahimahi, deep slope snappers and sharks (WPRFMC 2000b). One vessel made seven trips to these areas in 1999, targeting the two-spot snapper, *L. bohar*, at Kingman Reef, of which they caught 40,000 lb. The fishermen tested much of the catch for ciguatera without a single positive and shipped the catch to New York and Florida. They stopped fishing after results of a single specimen submitted for testing to the University Of Hawaii School Of Medicine showed slight traces of ciguatera.

Very little bottomfish research has been conducted in the PRIA to date. An assessment was conducted at Johnston Atoll in 1965, looking at the effects of dredging. The Coral Reef Initiative of 1995-1996 conducted general assessments of the reefs surrounding the PRIA and a joint coral reef assessment investigation between the USFWS and NMFS Honolulu Laboratory is underway. Cruises to Howland, Baker and Jarvis Islands and to Palmyra atoll and Kingman reef were conducted in 2000, 2001 and 2002. These investigations are focusing on the status of the shallow-water habitat including percent of live reef coverage, biodiversity and reef species stock assessments. As the assessments are being conducted with towed-sled scuba techniques, the deep-water habitat, including many of the commercially valuable snappers, is still unknown. To date, no data has been published from these cruises.

**PRIA Crustaceans Fishery**

A few fishermen have expressed interest in fishing for lobsters in the PRIA and at least two have attempted it. In 1999, one vessel left Hawaii to explore the lobster fishery in Palmyra/Kingman waters. However, tropical lobsters (green spiny, *P. penicillatus*) do not go into traps readily and the lobster harvest was unsuccessful as 800 traps were deployed and no lobsters were caught. They also dove on the reef to try to catch lobsters by hand, but were not much more successful and returned with about 20 tails. This venture was also believed to attempt to target the red crab (*Chaceon* spp.) but no information has been made available.

In addition, this vessel deployed traps at 300-800 m to target deep-water shrimp and red crab around Palmyra and Kingman. Although there is a danger of losing gear when setting this deep, the operation did not lose many traps and the CPUE was very high, at approximately 30 kg/trap.

Over the past few years, other fishermen have expressed interest in exploring a live lobster fishery in the EEZs around some of the PRIA (i.e., Palmyra and Johnston Atolls). There is virtually no research data regarding crustaceans in the PRIA. Detailed fishery data has been

collected by one vessel which fished for deep-water shrimp around Palmyra in 1999. It is believed that this is the only information on the deep-water shrimp fishery at Palmyra.

**Fishing Communities**

The total land area of the islands within the Council's jurisdiction is about 7,000 $mi^2$. In contrast, the EEZ waters surrounding them encompass nearly 1.5 million $mi^2$, an area nearly equal to all other US EEZ waters combined. Fishery resources have played a central role in shaping the social, cultural and economic fabric of the societies of Guam, American Samoa, Hawaii and the Northern Mariana Islands, which today comprise 1.4 million people. The aboriginal peoples indigenous to these islands relied on seafood as their principal source of protein and developed exceptional fishing skills. Later immigrants to the islands from East and Southeast Asia also possessed a strong fishing tradition. The importance of fisheries in the region is recognized in the Magnuson-Stevens Act, which states, "Pacific Island Areas contain unique historical, cultural, legal political and geographical circumstances which make fisheries resources important in sustaining their economic growth" (§2 (a) (10)).

In contrast to most US mainland residents, who have little contact with the marine environment, a large proportion of the people living in the western Pacific region observe and interact daily with the ocean for food, income and recreation. While most island residents today no longer depend on their catches for food, seafood continues to be an integral part of the local diet. For example, in Hawaii the per capita consumption of seafood is almost twice the national US average and is comparable to that of other Pacific islands.

Fishing also continues to contribute to the cultural integrity and social cohesion of island communities. In American Samoa, for instance, skipjack tuna, known locally as atu, is an especially important species both nutritionally and culturally. The methods and equipment for catching skipjack tuna have changed, but the fish brought to shore continue to be distributed within Samoan villages according to age-old ceremonial traditions. One can find similar traditions still practiced in Hawaii, the Northern Mariana Islands and Guam. These sociocultural attributes of fishing are at least as important as the contributions made to the nutritional or economic well-being of island residents.

In each island area within the region the residential distribution of individuals who are substantially dependent on or substantially engaged in the harvest or processing of fishery resources approximates the total population distribution. These individuals are not set apart—physically, socially or economically—from island populations as a whole. This dispersion is most evident on the island of Tutuila in American Samoa, where tuna processing has been the largest industrial activity for more than three decades. The canneries themselves are located in the village of Anua; the shipyard is in Satala; the wharf is in Fagatonga; the fuel facility is in Utulei; and the employees of these various fisheries-dependent facilities commute daily from villages all around the island.

Given the reference in the Magnuson-Stevens Act to the economic importance of fishery resources to the island areas within the western Pacific region and taking into account these islands' distinctive geographic, demographic and cultural attributes, the Council concluded that it is appropriate to characterize each of these island areas —Hawaii, Guam, American Samoa and the Northern Mariana Islands—as a fishing community. Defining the boundaries of the fishing communities broadly will help ensure that fishery impact statements analyze the economic and social impacts on all segments of island populations that are substantially dependent on or engaged in fishing-related activities.

The Council has compiled extensive information on the economic and social importance of fisheries to each island area. Summaries of this material are presented in the Council's FMPs, FMP annual reports and annual "Value of the Fisheries" report. Detailed information appears in a wide range of research reports that examine the history, extent and type of participation of island populations in the fisheries of the region. For example, in-depth analyses of the historical and contemporary importance of fisheries to the indigenous peoples of Guam, the Northern Mariana Islands, Hawaii and American Samoa are provided by Amesbury and Hunter-Anderson (1989), Amesbury et al. (1989), Iverson, et al. (1990) and Severance and Franco (1989). The Hawaii Fleet Industry and Vessel Economics project has produced cost-earnings studies of the Hawaii-based longline fleet (Hamilton et al. 1996) and Hawaii small-boat commercial fleet (Hamilton and Huffman 1997). Hamnett and Pintz (1996) examine the contributions of tuna processing and transshipment to island economies. A sociocultural study of Hawaii's troll and handline fishery has been conducted by Miller (1996). Clarke and Pooley (1988) provide an economic analysis of the lobster fishery in the NWHI. McCoy (1997) describes the traditional and ceremonial use of the green sea turtle in the Northern Mariana Islands. Additional detailed descriptions of the fisheries in the western Pacific region are presented in volume 55, number 2, of Marine Fisheries Review, 1993.

#### 6.1.3.5 Ecosystem and Stocks

**CNMI Bottomfish Fishery**

The highest reported commercial fishing catch is 71,256 lb. The small vessel subsistence catch, which occurs primarily within 25 nm of the inhabited islands, is estimated not to exceed 22,000 lb per year. According to RAIOMA estimates, at most 52% of the CNMI bottomfish MSY (43.3 of 185,200 lb) has been caught in any given year. Table 8 shows the largest known or estimated value for that category in any given year, thus is a precautionary overestimation of total catch.

In recent years, large vessels have caught as much as 70% of the reported landings (35,000 of 50,000 lb). It is assumed that 100% of the landings from the large vessel fishery are reported. If equal amounts of the small-vessel caught bottomfish are reported and unreported, this could equal as much as 15,000 lb each. This equates to a maximum of 65,000 lb landed for reported and unreported bottomfish in a given year.

**Table 13 Estimated maximum possible bottomfish catch from all sources**

| | **Large vessel commercial catch** | **Small vessel reported catch** | **Non-reported subsistence catch** | **Total catch (43.3 mt)** | **MSY (84 mt)** |
|---|---|---|---|---|---|
| **Southern Islands** | unavailable (part of 17.3) | 10 mt | ~ 10 mt | > 20 mt | 39%, 32.75 mt |
| **N. Islands and W. Seamounts** | 17.3 mt | ~ 0 mt | ~ 0 mt | < 17.3 mt | 61%, 51.25 mt |

The bottomfish fishing grounds around the Southern Islands are reported to be fully fished. While 50% of the MSY for the entire EEZ has been caught in any year, the majority of the effort comes from the populated Southern Islands. The MSY for the Southern Islands is 32.75 mt (84 mt 0.39). The estimated 20 mt of small vessel catch can be attributed to the Southern Islands. Some amount of large vessel fishing may bring this total in the range of MSY.

Recent surveys of the Division of Fish and Wildlife have indicated the bottomfish complex for this fishery remains healthy and hasn't shown any declines based on CPUE data. Four new 40-plus foot vessels are preparing to enter the fishery, in addition to the seven in existence (112$^{th}$ Council Meeting minutes).

While the Northern Islands bottomfish fishery is small, a number of vessels have consistently fished in the area the past few years, with four vessels in operation as of April 2001 (M. Trianni, CNMI-DFW, pers. comm.). Annual bottomfish landings for the fishery in the past four years have averaged just less than 50,000 lb. Archipelago-wide total estimated sustainable bottomfish harvest is 185,000 lb, of which 56% or 103,600 lb would come from the Northern Islands (Polovina et al. 1985). While it may appear that these stocks are under-exploited at present, an increase in the number of vessels fishing should be considered carefully. Limited access or other catch or effort restrictions may need to be considered in the future. Inclusion of this area within the Bottomfish FMP is necessary before any such actions can be considered.

Domestic US, joint-venture, and foreign fishermen have inquired about full-time bottomfish fishing throughout much of the CNMI. The impact to the commercial market of further

development of the fishery is still unclear despite a fish market assessment study completed in 1995 (Radkte and Davis 1995). Despite the study's intention of promoting the fishery, expected increases in vessel participation and total catch have been smaller than expected in the Northern Islands fishery.

An assessment of the bottomfish stocks surrounding Saipan has been recommended. After identifying the extent of resource utilization, additional data could be used to help determine comprehensive management strategies. Continued sampling of bottomfish vessels and DFW fishing in the Northern Islands would provide estimates of CPUE to aid in future management.

**CNMI Crustaceans Fishery**

Fishermen have reported that there are few lobsters remaining in the waters off Saipan and most of the catch comes from Tinian. Most of these are caught by hand along the reefs. Nevertheless, lobster sales appear to be on an upward trend with fish markets and restaurants purchasing greater amounts from local vendors. The largest landings occur between April and September when the waters are relatively calm for diving. While lobsters are almost exclusively caught in Tinian, they are generally sold in Saipan due to a high local demand from the tourist restaurants (Trianni, 1998b).

As most of the known potential lobster grounds have been fully explored, there is little reason to believe that the spiny lobster fishery can expand to new fishing grounds. Lobster production appears to be diminishing in the near-shore grounds around Saipan due to overfishing. The catch around Tinian supplies some of the demand in the Saipan hotels and restaurants with imported lobster covering the rest of the demand.

A new regulation prohibits fishing with SCUBA in some nearshore reefs. In addition, a number of no-take marine protected areas have been established in the nearshore waters off of Rota (Sasanhaya Bay Fish Reserve) and Saipan (Managaha Marine Conservation Area, Forbidden Island Marine Reserve and Bird Island Marine Reserve). No sanctuaries presently exist on Tinian, although it is expected that the proposed Tinian Marine Reserve would be enacted into law in 2002. These recent regulations would likely impact the harvest of lobsters and may protect some overfished reefs.

The deep-water shrimp fishery and the associated red crab incidental catch does offer some promise as fishing operations have, when in operation, landed only about 5% of the estimated sustainable yield. The difficulties in the fishery described previously (e.g., fluctuating market demand, local depletion and loss of gear) could be overcome and a profitable fishery is possible. Those who have researched these stocks and those in the fishery feel that this fishery is self-regulating due to the high cost of fishing and the effect of local depletion, causing catch per unit effort to become prohibitively low before stocks are overfished.

Because lobsters around CNMI are caught almost exclusively within three miles of land, and the directed fishery is very small (2,000 - 4,000 lbs. reported annually), the primary concern in the crustacean fishery is the possible future developments in the deep-water shrimp and red crab fishery. There is debate as to whether this fishery needs to be managed and whether management

measures should be available in the event that the fishery does expand and needs future intervention. Scientific reports have stated that, due to the topography deep-water shrimp inhabit and their wide-spread occurrence, fishing would cease due to falling CPUE from local depletion or gear loss long before MSY is reached or overfishing could occur. Future technology might alter this situation. For this reason, waters around the CNMI should be included in the crustaceans FMP so a management framework can be instituted. Such action would also facilitate the implementation of increased catch reporting should that become necessary.

**CNMI Precious Corals Fishery**

No CNMI fishery for precious corals presently exists. In 2000, a single Hawaii-based firm had expressed interest in exploring for precious corals outside of the main Hawaiian islands, with sites in the northwestern Hawaiian islands as the first area of expansion. A March 2001 policy announcement by NMFS, in reference to the newly established NWHI Coral Reef Ecosystem Reserve, bans harvest of precious corals in the NWHI. A later statement from the NOAA Administrator emphasized that no permanent policy decisions have been made with regard to this Reserve. The potential for restrictive regulations in the NWHI could encourage exploration for precious coral resources in the CNMI if the industry is successful in establishing a profitable market.

**PRIA Bottomfish Fishery**

While very little information is available on these stocks in the PRIA, they are likely virgin or very lightly impacted by fishing activity. Only at Palmyra, Johnston and Wake has any significant fishing occurred. On Johnston and Wake, fishing effort is mainly recreational lagoon and reef fishing. The majority of bottomfish MUS occur at a much greater depth than most recreational gear can fish. At Palmyra, longline vessels fishing for tuna are known to opportunistically troll and might set bottomfish gear. At most PRIA (Howland, Baker, Jarvis, Wake and Kingman), available bottomfish grounds (slopes and escarpments) are extremely limited and likely do not support large standing stocks even in virgin conditions. At other PRIA (Johnston and Palmyra), available grounds could support stocks worthy of small scale commercial or recreational fisheries. While difficulties with ciguatera have been encountered with some of the bottomfish species in these two locations, it appears fishing would continue.

**PRIA Crustaceans Fishery**

As is the case for the bottomfish fishery, most of the banks are very steep and do not appear to offer much area of suitable habitat. In addition, the Hawaiian red spiny lobster that does enter traps is found only in the Hawaii and at Johnston Atoll. Any harvesting of the tropical green spiny lobster would likely need to be done by hand With technological advancements in shark repellents (such as semiochemicals) currently being researched and/or advances in harvest methods, small viable fisheries for green spiny lobster could arise in the PRIA. The deep-water shrimp fishery could hold some promise as well. Due to the steepness of the banks, it is likely that a good deal of exploratory fishing would be needed to determine the viability of this fishery.

### 6.1.3.6 Protected Species

The following section discusses and lists species found in the action areas that are Federally protected under at least one of the following laws: *The Marine Mammal Protection Act, and the Endangered Species Act.* Some animals are protected from harvest under more than one of the above statutes. For ease of discussion they divided in the following section between animals protected under the endangered species act and those protected exclusively under one of the other statutes.

***Species Listed Under the Endangered Species Act***

Marine species listed as endangered or threatened under the Endangered Species Act (ESA) (Public Law 93-205; 87 Stat. 884) that have been observed in the waters around the PRIA or CNMI are:

**Species listed as endangered**

Short-tailed albatross *(Phoebastria albatrus)*
Hawaiian monk seal *(Monachus schauinslandi)*
Hawksbill turtle *(Eretmochelys imbricata)*
Leatherback turtle *(D. coriacea)*
Humpback Whale *(Megaptera novaeangliae)*
Sperm Whale (*Physeter macrocephalus)*

**Species listed as threatened**

Loggerhead turtle *(Caretta caretta)*
Green turtle *(Chelonia mydas)*
Olive ridley turtle (*Lepidochelys olivacea*)

Other species listed as *endangered* such as the North Pacific Right whale *(Eubalaena japonica),* Blue whale *(Balaenoptera musculus),* Fin whale *(B. Physalus), and* Sei whale *(B. Borealis)* are found in the area over which the Council has jurisdiction, these species have not been observed in the waters around the PRIA or CNMI, and they are not discussed any further in this document. The endangered dugong *(Dugong dugong)* has been sighted just to the south in Guam and merits a quick mention.

There follows a description of what is known about the presence and status of observed endangered and threatened species. Data on fishery interactions is unavailable as these areas are not subject to federal catch reports or observer requirements. The proposed action is not anticipated to adversely impact these species as it is not expected to increase or alter current operations, or to impose Federal authority on any existing fishing operations that are significantly different from those used in currently regulated areas. This document has been written to serve as a Biological Assessment in the event that a consultation under section 7 of the Endangered Species Act is required.

*Species Protected under the Endangered Species Act in CNMI*

**Sea Turtles**

Three species of sea turtles are known to inhabit the waters around the CNMI, the green sea turtle (*C. mydas*), the hawksbill sea turtle (*E. imbricata*), and the leatherback sea turtle (*D. coriacea*) (Kolinski et al. 1999). However, the leatherback sea turtle is infrequently sighted in the CNMI (NMFS 1998). Under the US Endangered Species Act, hawksbill and leatherback turtles are listed as endangered, and are protected under the Act. The green sea turtle is listed as threatened, and has been afforded the same protection under the Endangered Species Act. Both species are listed as endangered worldwide by the International Union for the Conservation of Nature and Natural Resources and appear on Appendix 1 of the Convention of International Trade in Endangered Species of Wild Flora and Fauna (CITES).

**Green Sea Turtle** (*C. mydas*): Based on nearshore surveys conducted jointly between the CNMI-DFW and the NMFS around the Southern Islands (Kolinsky et al, 2004), an estimated 1,000 to 2,000 green sea turtles forage in these areas(Kolinsky et al, 2004). The green sea turtle is a traditional food of the native population and although harvesting them is illegal, divers have been known to take them at sea and others have taken the nesting females (NMFS and USFWS 1998a, McCoy 1997). Turtle eggs are also harvested in the CNMI. Green sea turtles forage in depths where benthic marine algae are present, usually less than 10m deep, and rest in areas not more than 40m deep. Preliminary assessments show that foraging areas are usually in proximity to resting habitats. Nesting beaches and seagrass beds on Tinian and Rota are in good condition but beaches and seagrass beds on Saipan have been impacted by hotels, golf courses and general tourist activities. Fewer than 10 green turtles are known to nest on the islands of Saipan, Tinian and Rota each year. The extent of nesting in the Northern Islands is unknown, although they have also been documented around FDM.

**Hawksbill Sea Turtle** (*E. imbricata*): Hawksbill turtles have occasionally been observed in the past around the CNMI. However, they were not observed in a detailed assessment conducted in 2001 (Kolinsky et al, 2004), nor were they observed in 10 aquatic surveys along the shores of Tinian in 1995. According to the 1998 Pacific Sea Turtle Recovery Team Recovery Plan for the hawksbill turtle (NMFS and USFWS 1998b), there are no reports of nesting or sightings in the waters surrounding the CNMI. This does not rule out the possibility of a few hawksbill turtles around the CNMI as hawksbill nesting surveys on small pocket beaches in remote areas of CNMI have never been done. A single hawksbill sighting occurred in 1996 during the detonation of an unexploded ordinance off of Rota. The turtle was recovered near the explosion site and subsequently died, apparently from internal injuries incurred from the blast (Trianni 1998c).

Similar to other species of sea turtles, approximately the first five years of a hawksbill turtle's life is spent in the pelagic environment. As turtles mature, they switch from the pelagic environment to benthic reef feeding at a size of 15 to 35 cm CCL. Until recently, hawksbill

turtles have been classified as opportunistic feeders, foraging on a wide variety of marine invertebrates and algae. New information on stomach contents of this species found they contained solely three unknown species of sponges (Balazs 1978). As they grow, they are thought to shift their foraging territory to optimize growth, moving from shallow water habitat to deep water habitat as they become capable of deeper dives.

Several factors contribute to the endangered status of the hawksbill turtle. Although prohibited under CITES, their shells continue to be harvested for jewelry and ornamentation. Their eggs continue to be harvested for food in some areas. They are vulnerable to marine debris, sometimes becoming so entangled they cannot surface to breathe. With no known nesting sites in the CNMI, the Recovery Plan cited the primary threat to the Hawksbill turtle as directed take in the marine environment. No explanation was given and no takes have been documented. In addition, development on Saipan, Tinian and Rota is adversely impacting the beaches which could possibly be used by nesting turtles. Other threats listed by the Recovery Plan Team included algae/seagrass/reef degradation, incidental take by pelagic fisheries in domestic and international waters. These threats are categorized as potential as no information is available.

**Leatherback Sea Turtle** (*D. coriacea*): The leatherback turtle is the largest sea turtle. It is the only sea turtle species lacking a hard shell. These turtles exist in all oceans and can be found from the equator to high latitudes. In the Pacific their known range extends into the Bering Sea. Western Pacific leatherback turtles suffered large population declines in the 1990s. Anthropogenic effects such as egg collection, direct harvest of females, incidental takes in net fisheries in the Western Pacific leatherback's coastal habitats have been largely responsible for population declines in recent decades. Pelagic longline fisheries are known to also have interactions with leatherback sea turtles (NMFS 2005b). There are no known interactions between leatherback sea turtles and bottomfish, precious corals, or crustacean fishery operations.

The leatherback turtle may occur in waters surrounding the CNMI, but sightings have been infrequent. It is not known to nest in the Marianas Archipelago (NMFS 1998c).

**Olive Ridley Sea Turtle** (*L. olivacea)*: The olive ridley turtle is not known to occur in the waters surrounding CNMI, however, the species range from 30 degrees north to 15 degrees south in tropical and warm temperate oceans, in latitudes coincident with CNMI.

**Marine Mammals**

**Cetaceans**

**Humpback whales** *(M. novaeangliae)* are found in all oceans and their range extends from high latitudes in the Arctic and Antarctic to the equator. They are baleen whales and are known to feed on small schooling fish and krill. Humpback whales are known for their extensive yearly migrations between summer feeding grounds in high northern latitudes and breeding grounds in tropical waters.

Humpback whales are known to appear in CNMI (Eldredge 1991). These animals are thought to be part of a Western Pacific humpback stock which is distinctive from the Eastern Pacific stock

that winters in Hawaii. CNMI appears to be the southern limit of the wintering grounds for the Western Pacific stock which feeds in the summertime in an area extending from the Sea of Okhotsk to the Bering Sea (Taitano 1991; Darling and Mori 1993).

There are no known interactions between Humpback whales and the fisheries under consideration in this document in CNMI.

**Sperm whales** (*P. macrocephalus)* are the largest of the toothed whales. They are identified by their huge blocky heads, low dorsal fin (a nub really) set about two thirds back on the body, a wrinkled tail stock that has a series of small bumps running down the dorsal surface towards the tail flukes. It is one of the most widely distributed marine mammals. With the exception of the Arctic Ocean it can be found at all latitudes in all oceans including the Mediterranean Sea (Jefferson et al.1993). Sperm whales are known to segregate by sex with males primarily inhabiting colder temperate waters and females and calves inhabiting tropical and warm temperate seas.

Historically, sperm whales are known to occur in the waters around CNMI from whaling records (Townsend 1935). Additionally, biologists have reported confirmed sightings of this species within the last fives years within CNMI waters (Sutterfield 2005). This species is known to interact with demersal longline groundfish operations in Alaska, especially sablefish longline operations according to observer data. Of the fisheries that sperm whales are known to interact with, demersal longline fishing would be the most similar to bottomfish fishing as it is practiced in the Central and Western Pacific.

By 2004, there were numerous interactions between Alaskan sablefish longliners and sperm whales reported by observers. Three entanlgements were observed. In two cases the whales were released with minimal non-serious injuries and in the last case the level of injury could not be determined. Overall, NMFS has determined that these interactions have not been detrimental to sperm whale populations (NMFS 2004).

There are no known reports of interactions between sperm whales and bottomshing gear in the Central and Western Pacific. As with the Alaskan groundfish fishery, interactions would most likely not adversely affect the health of individual animals or local populations

**Pinnipeds and Sirenians:** No pinnipeds or sirenians species are known to occur in CNMI waters. However, there have been several sightings of dugongs off of Guam just to the south (Eldredge 1991).

**Dugongs** range through out tropical coastal areas in the Indian Ocean and Western Pacific. They are vegetarian in diet subsisting mainly on sea grasses in shallow waters (Jefferson et. al. 1993).

There are no known interactions between dugongs and bottomfish fishing operations in areas under Council jurisdiction. Furthermore, interactions with bottomfish vessels would be unlikely as bottomfish fishing grounds and dungong feeding habitats are exclusive.

*Species Protected under the Endangered Species Act in the PRIA*

**Sea Turtles**

**Green Sea Turtle** (*C. mydas*)**:** The threatened green sea turtle is reported to nest at Palmyra and Jarvis Islands, and resident turtles inhabit the lagoon waters at Wake and Palmyra. Few turtles have ever been seen in the marine environment around Howland, Baker, Kingman or Johnston and nesting at these areas is unknown. According to the 1998 Recovery Plan for the green sea turtle, seawall construction at Johnston Atoll negates the potential for nesting at these beaches, while military hazardous and toxic waste has contaminated the coastal waters. Beach erosion has been targeted as a problem at Palmyra Atoll, causing barriers to adult and hatchling turtle movements and degrading nesting habitat. When the US military occupied Palmyra during World War II, the base was along the coast of a northern island about 5 kilometers from known nesting and other turtle feeding areas.

Green sea turtles are herbivores, and forage on selected macroalgae and sea grasses. Green turtles residing in the waters of Johnston Atoll feed almost exclusively on green algae (*Caulerpa racemosa* and *Bryopsis pennata*). According to the recovery plan for the green sea turtle, the primary threats to the turtles in this area include coastal construction, beach erosion, and environmental contamination.

Very few interactions occur between green sea turtles and bottomfish or lobster gear. Interactions are increasing, however, shoreline and nearshore recreational fisheries in the Main Hawaiian Islands and the recreational fishery in the PRIA should be monitored for this occurrence.

**Hawksbill Sea Turtle** *(E. imbricata)*: There are no records of nesting hawksbill turtles in the Pacific remote island areas. The hawksbill sea turtle is regularly sighted in the waters of Palmyra Atoll, and the Recovery Plan indicates that waters around the PRIA may provide marine feeding grounds for this species. Environmental contaminants and entanglement in marine debris are considered threats. Incidental take in coastal fisheries are a known problem, but the extent is unknown. However, there have been no reported interactions in the bottomfish, precious coral and crustacean fisheries.

**Leatherback Sea Turtle** (*D. coriacea*): The leatherback turtle is the largest sea turtle. It is the only sea turtle species lacking a hard shell. These turtles exist in all oceans and can be found from the equator to high latitudes. In the Pacific their known range extends into the Bering Sea. Western Pacific leatherback turtles suffered large population declines in the 1990s. Anthropogenic effects such as egg collection, direct harvest of females, incidental takes have been largely responsible for population declines in recent decades. (NMFS 2005b).

There have been interactions between Hawaii-based pelagic longline vessels in the vicinity of Johnston Atoll. However, there are no known interactions between bottomfish, precious corals and crustaceans fisheries in areas where the leatherback commonly occurs and these fisheries operate. Therefore, it can be reasonably concluded that this trend would continue for these fisheries in the PRIA.

**Olive Ridley Sea Turtle** (*L. olivacea)*: The olive ridley while listed as *threatened* under the ESA, is the most abundant sea turtle in the world. In the east Pacific it has nesting beaches in Mexico and Costa Rica. In the west Pacific this species nests in India, Malaysia, Philippines, and Indonesia (NMFS 2004)It is known for nesting events called *arribadas* in which thousands of females emerge at once to lay eggs.

There are no known interactions between this species and the bottomfish, precious corals, or the crustacean fisheries. Therefore it can be reasonably assumed that there would not be any interactions with these fisheries if conducted in the PRIA.

**Pinnipeds**

In 1976 the Hawaiian monk seal (*M. schauinslandi*) was designated as depleted under the Marine Mammal Protection Act and the Endangered Species Act. It is the most endangered seal in the US. Currently the entire population of monk seals totals about 1,400. They breed only in the Hawaiian archipelago, and with the exceptions of a few births over the past decade in the main Hawaiian Islands, all pups are born in the remote Northwestern Hawaiian Islands (NWHI). The Hawaiian monk seal has been sighted on two occasions at Palmyra (Redmond 1990); site visits by biologists have been infrequent so it is not clear how regularly monk seals use the atoll.

Aggressive male monk seals in the NWHI are known to mob females and sometimes kill pups. Mobbing behavior is thought to occur due to a skewed sex ratio and 22 sub-adult males were translocated from Laysan Island in the NWHI to the Big Island in the MHI in 1994. In 1998 two males were identified as aggressive at French Frigate Shoals. They were translocated to Johnston Atoll in 1999 and were resighted at that location for a few months, although they have not been sighted since.

A female monk seal, tagged as a pup on Laysan, appeared at Johnston Atoll in 1968. It was the first to be recorded outside the Hawaiian Archipelago. It stayed until at least mid-August 1972 and in 1969 an untagged female hauled out and pupped. After the female left a month or so later, the pup remained until it died in 1971. Marks indicate that the cause of death was probably a shark attack (Amerson and Shelton, 1976). More recently another female has been seen at Johnston Atoll from July to September 1999 (O'Daniel, USFWS, Johnston Atoll National Wildlife Refuge, pers comm).

In 1989, all WPRFMC FMP fisheries (except for the Hawaii long line fishery which has been re-categorized in 2004 as Category I under the MMPA) were classified as Category III under the Marine Mammal Protection Act. (This classification indicates that the fisheries were determined to have a remote likelihood of interacting with marine mammals. There are two types of effects which may occur in fishery interactions with monk seals; direct interaction with fishing gear or indirect interaction where fishing activity results in changes to their behavior or health (Nitta and Henderson 1993).

One direct interaction between a monk seal and lobster fishing gear occurred in 1986 and resulted in mortality from entanglement in the bridle rope of a NWHI lobster trap (NMFS, unpublished data, 1986). Since monk seal protective measures were implemented via an

amendment to the Crustaceans FMP, there have been no reports of interactions between monk seals and lobster gear. The Monk Seal Recovery Team and the Marine Mammal Commission have identified a second issue of concern between the NWHI lobster fishery and the monk seal population. They cite a potential for the lobster fishery to compete with the monk seal for a portion of its forage base. Research to determine the relative importance of lobsters in the diet of monk seals is inconclusive and ongoing. However, including the PRIA in the management area for crustaceans would not increase the fishing effort in the area. It would provide better reporting and the ability to implement Federal regulations if needed.

The bottomfish fishery around the NWHI was monitored by NMFS observers from October 1990 to December 1993 with approximately 13% coverage (Nitta 1994). In this time period, no monk seals were observed hooked or entangled in bottomfish fishing gear. The reported interactions with monk seals were characterized by theft of fish catch from handlines. Other interactions occurred when the monk seals consumed discarded fish. The Hawaii-based bottomfish fishery has been monitored under a mandatory observer program since October 2003, to date (December 31, 2004) there are no observed interactions between bottomfish fishing and marine mammals (Hawaii Observer Program Bottomfish Annual Report, PIRO)

**Cetaceans**

The **Humpback whale's** *(M. novaeangliae)* range is known to include the EEZ surrounding the PRIA. They are commonly seen during winter months in the waters surrounding the Hawaii Archipelago. It has been determined that the waters surrounding Hawaii are the breeding and calving grounds for the Northeastern Pacific humpback whale stock. Within the PRIA, a group of three humpbacks was observed for the better part of a day close to a research vessel during a visit to Johnston Atoll (NMFS 2004).

*Marine Mammals Not Listed Under the ESA Occurring in CNMI*

**Cetaceans:** Humpback whales (*M. novaeangliae*) are known to appear between Saipan and FDM, however no interactions between whales and bottomfish fishing gear, lobster gear or precious coral harvesting gear have or are expected to occur. Sightings of Risso's dolphin (*Grampus griseus*), Cuvier's beaked whale (*Xiphias cavirostris*), pygmy sperm whale (*Kogia breviceps*), pilot whale (*Globicephala melaena*), striped dolphin (*Stenella coeruleoalba*), and the pantropic whitebelly spinner dolphin (*Stenella longirostris longirostris*) have occurred around CNMI.

Marine mammals not listed as endangered or threatened under the Endangered Species Act that have been observed in waters around CNMI are:

Risso's dolphin *(Grampus griseus)*

Bottlenose dolphin *(Tursiops truncatus)*

White-belly spinner dolphin *(Stenella longirostris longirostris)*

Pygmy killer whale *(Feresa attenuata)*

False killer whale *(Pseudorca crassidens)*

Pilot whale, short-finned *(Globicephala macrorhynchus)*

Cuvier's beaked whale *(Ziphius cavirostris)*

Pygmy sperm whale *(Kogia breviceps)*

Pilot whale (*Globicephala macrorhynchos*)

Bryde's whale (*Balaenoptera edeni)*

Source: Elderedge 1991; Sutterfield 2005

There is no known information on interactions between fisheries and marine mammals in CNMI. Sightings of these species are rare, and interactions are not likely to occur in these fisheries.

The following species have known ranges overlapping with EEZ waters surrounding CNMI, but do not have known sightings:

Blue whale (*Balaenoptera musculus*)

Fin whale (*Balaenoptera physalus*)

Minke whale (*Balaenoptera acutorostrata*)

Sei whale (*Balaenoptera borealis*)

Blaineville's beaked whale (*Mesoplodon densirostris*)

Ginko-toothed beaked whale (*Mesoplodon ginkodens*)

Longman's beaked whale (*Indopacetus pacificus*)

Rough-toothed dolphin (*Steno bredanensis)*

Melon-headed whale (*Peponocephala electra*)

Fraser's dolphin (*Lagenodephis hosei*)

Killer whale (*Orcinus orca*)

Source: Jefferson, *et al.* 1993

**Seabirds**

According to Pratt et al. (1987), the following seabirds have been sighted and are considered residents of the CNMI; wedge-tailed shearwater (*Puffinus pacificus*), white-tailed tropicbird (*Phaethon lepturus*), red-tailed tropicbird (*Phaethon lepturus*), masked booby (*sula dactylatra*)

and brown booby (*Sula leucogaster*). None of these birds are endangered and there have been no reported interactions with the local bottomfish or crustacean fisheries.

The following seabirds have been sighted and are considered visitors to the CNMI; streaked shearwater (*Calonectris leucomelas*), short-tailed shearwater (*Puffinus tenuirostris*), Christmas shearwater (*Puffinus nativitatis*), Newell's shearwater (*Puffinus auricularis*), Audobon's shearwater (*Puffinus iherminieri*), Leach's storm-petral (*Oceanodroma leucorhoa*), Matsudaira's storm-petral (*Oceanodroma matsudairae*), and the red-footed booby (*Sula sula*). Of these, only the Newell's shearwater is listed as endangered under the ESA. There have been no reported interactions with the local fisheries and any of these seabirds.

There have been no sightings of the endangered short-tailed albatross (*Diomedea albatrus*) in the CNMI although the CNMI is within the range of the only breeding colony at Torishima, Japan.

*Marine Mammals not listed under the ESA found in the PRIA*

**Cetaceans**

Marine mammals not listed as endangered or threatened under the ESA that have been observed in waters around the PRIA are:

Bottlenose dolphin *(Tursiops truncatus)*

Cuvier's beaked whale *(Ziphius cavirostris)*

False killer whale *(Pseudorca crassidens)*

Pan-tropical spotted dolphin (*Stenella attenuata*)

Pilot whale, short-finned *(Globicephala macrorhynchus)*

Spinner dolphin *(Stenella longirostris)*

Melon-headed whale (*Peponocephala electra)*

Beaked Whales (*Mesoplodon spp.)*

Two NMFS cruises to the Pacific remote island areas in 2004 confirmed the presence of several more marine mammals in the waters surrounding those islands, reefs, and atolls. At Palmyra NMFS researchers documented groups of melon-headed whales occurring on the nutrient rich SW side of the atoll. At Jarvis these same researchers recorded 100-150 bottle-nosed dolphins (NMFS 2004a). Smaller groups of bottle-nosed dolphins were seen at Baker and Howland Islands as well (NMFS 2004b Citation not found in section 13.0). In Hawaii, the bottle-nosed dolphin has been reported to remove fish from handline bottomfish fishing gear, and also to consume discarded undersized or unmarketable species. In addition, dolphins regularly damage fish by leaving bite marks during unsuccessful attempts to remove fish from handlines. There are no known injuries resulting from these interactions (Nitta 1994).

At Johnston Atoll, the Cuvier's beaked whale is regularly seen offshore, and according to one report may actually calve in the lagoon (Green 1997). There have also been strandings of Cuvier's beaked whale at Johnston Atoll (Flint 2005; NMFS unpublished 2005). According to unpublished NMFS data there were three stranding events at Wake Atoll of this species in 1977.

Forney and Kobayashi compiled and analyzed reports by NMFS observers documenting interactions between Hawaii-based longliners and marine mammals. This paper helps shed light on the species that occur in the PRIA. Information provided in their paper as it pertains to the PRIA is discussed below (Forney and Kobayashi 2005).

Forney and Kobayashi (2005) listed three interactions with false killer whales occurring in the EEZ surrounding Palmyra Atoll. False Killer Whales are a common toothed whale in tropical and warm temperate seas. The Hawaii-based longline fishery has been classified as a Category I fishery due to interactions with false killer whales. While they are considered a pelagic species known to predate other cetaceans, pelagic fish, and squid they are also commonly found in near-shore waters surrounding the Main Hawaiian Islands (NMFS 2005). There are no known interactions between false killer whales and the precious coral, bottomfish and crustacean fisheries.

Forney and Kobayashi (2005) also reported an interaction between a pan-tropical spotted dolphin and longline gear within the EEZ surrounding Palmyra Atoll. The interaction resulted in the death of the animal. There are no known interactions between pan-tropical spotted dolphins and any of the fisheries considered in this document. Finally, Forney and Kobayashi documented a longline interaction with a short-finned pilot whale in the EEZ surrounding Johnston Atoll.

In 2005, USFWS reported to NMFS a stranding event involving two unidentified beaked whales at Palmyra Atoll. Photographs and crania are being analyzed to positively identify the specimens. Preliminary analyses place the animals in the genus *Mesoplodon* (Schofield 2005).

The following marine mammals have known ranges that overlap the EEZs surrounding the PRIA, but have no known sighting records:

Blue whale (*Balaenoptera musculus)*

Fin whale (*Balaenoptera physalus*)

Minke whale (*Balaenoptera acutorostrata)*

Sei whale (*Balaenoptera borealis*)

Pygmy sperm whale (*Kogia breviceps*)

Dwarf sperm whale (*Kogia simus*)

Blaineville's beaked whale (*Mesoplodon densirostris*)

Ginko-toothed beaked whale (*Mesoplodon ginkodens*)

Hubbs beaked whale (*Mesoplodon carlhubbsi)*

Longman's beaked whale (*Indopacetus pacificus*)

Rough-toothed dolphin (*Steno bredanensis*)

Striped dolphin (*Stenella coeruleoalba*)

Common dolphin (*Delphinus delphis)*

Fraser's dolphin (*Lagenodelphis hosei*)

Pygmy killer whale (*Feresa attenuata*)

Killer whale (*Orcinus orca*)

Source: Jefferson *et al.* 1993

There are no known interactions between the fisheries considered in this document and the above species.

Monk seals do not occur in CNMI, GUAM and American Samoa and most of the PRIA[4], having only been very rarely sighted at Johnston. The likelihood of an interaction between these fisheries and monk seals is considered extremely remote.

All WPRFMC FMP fisheries are classified as Category III under the Marine Mammal Protection Act, except for the Hawaii-based longline fleet which was classified as Category I in 2004. This indicates that the bottomfish, crustacean and precious coral fisheries have been determined to have a remote likelihood of interacting with marine mammals.

**Seabirds**

Of the many species of seabirds recorded found in the PRIA, only the short-tailed albatross (*P. albatrus*) is listed as endangered or threatened under the ESA. There have been no reported interactions in the region between short-tailed albatrosses and bottomfish or lobster gear. Although no information exists on seabird interaction with fisheries in the PRIA, a few interactions with Laysan albatrosses (*Phoebastria immutabilis*) and black-footed albatrosses (*Phoebastria nigripes*) were observed in the NWHI bottomfish observer program from 1990 through 1993 (Nitta 1999). These interactions were characterized by attempted bait theft. Although there is a possibility of accidental hooking of seabirds, the circle hooks used in the bottomfish fishery do not lend easily to snagging.

4 Howland, Baker, Jarvis, Wake and Palmyra Islands, Johnston Atoll and Kingman Reef. Midway, which is jurisdictionally designated as a PRIA, has been defined in the Code of Federal Regulations (CFR) as a part of the Management Area for each of the FMPs and is not considered in these amendments.

### 6.1.3.7 Essential Fish Habitat and Habitat Areas of Particular Concern

In 1998, the Council designated EFH for the Pelagics, Crustaceans, Bottomfish and Precious Coral FMPs in the Sustainable Fisheries Act (SFA) amendment which addressed new requirements under the 1996 reauthorization of the Magnuson Stevens-Act. In this amendment, the Council identified EFH based on suggested guidelines, as well as the level of available environmental and fisheries information. A similar analysis was conducted prior to the recent designation of additional MUS, EFH and HAPC in the Council's Coral Reef Ecosystem FMP. This includes data on current and historic stock size, the geographic range of the managed species, the habitat requirements by life history stage and the distribution and characteristics of those habitats. Since EFH has to be identified for each major life history stage, information about a species' distribution, density, growth, mortality and production within all the habitats it occupies, or formerly occupied, is also necessary. Due to the broad definition of EFH, the variety of habitat needs among species under the same FMP and a paucity of data, EFH has been broadly designated in most cases in the Western Pacific Region.

In determining whether a type or area of EFH should be designated as a HAPC, one or more of the following criteria was met: ecological function provided by the habitat is important; habitat is sensitive to human-induced environmental degradation; development activities are or would be stressing the habitat type; or habitat type is rare.

NMFS guidelines state that the quality of available data should be rated using the following four-level system:

| | |
|---|---|
| Level 1: | All that is known is where a species occurs based on distribution data for all or part of the geographic range of the species. |
| Level 2: | Data on habitat-related densities or relative abundance of the species are available. |
| Level 3: | Data on growth, reproduction or survival rates within habitats are available. |
| Level 4: | Production rates by habitat are available. |

With higher quality data those habitats most highly valued by a species can be identified, allowing a more precise designation of EFH. Habitats of intermediate and low value may be essential depending on the health of the fish population and the ecosystem. For example, if a species is overfished, and habitat loss or degradation is thought to contribute to its overfished condition, all habitats currently used by the species may be essential.

At present, there is not enough data on the relative productivity of different habitats to develop EFH designations based on Level 3 or Level 4 data for any of the Western Pacific Council's MUS. The Council adopted a fifth level, denoted Level 0, for situations in which there is no information available about the geographic extent of a particular managed species' life stage.

The Council used the best available scientific information to describe EFH in text and tables that provide information on the biological requirements for each life stage (egg, larvae, juvenile, adult) of all MUS. Careful judgment was used in determining the extent of the essential fish habitat that should be designated to ensure that sufficient habitat in good condition is available to maintain a sustainable fishery and the managed species' contribution to a healthy ecosystem. Because there are large gaps in scientific knowledge about the life histories and habitat requirements of many MUS in the western Pacific region, the Council adopted a precautionary approach in designating EFH to ensure that enough habitat is protected to sustain managed species.

**Table 14**. Essential Fish Habitat (EFH) and Habitat Areas of Particular Concern (HAPC) for species managed under the Pelagics, Crustaceans, Bottomfish and Seamount Groundfish, Precious Corals Western Pacific FMPs

All areas are bounded by the shoreline, and the outward boundary of the EEZ, unless otherwise indicated.

| **SPECIES GROUP (FMP)** | **EFH (juveniles and adults)** | **EFH (eggs and larvae)** | **HAPC** |
|---|---|---|---|
| Pelagics | water column down to 1,000 m | water column down to 200 m | water column down to 1,000 m that lies above seamounts and banks. |
| Bottomfish and Seamount Groundfish | water column and bottom habitat to a depth of 400 m | water column down to 400 m | all escarpments and slopes between 40-280 m, and three known areas of juvenile opakapaka habitat |
| Precious Corals | Keahole, Makapu'u, Kaena, Wespac, Brooks, and 180 Fathom gold/red coral beds, and Miloli'i, S. Kauai and Au'au Channel black coral beds | not applicable | Makapu'u, Wespac, and Brooks Bank beds, and the Au'au Channel |
| Crustaceans | bottom habitat from shoreline to a depth of 100 m | water column down to 150 m | all banks within the Northwestern Hawaiian Islands with summits less than 30 m |

### 6.1.4 nvironmental Consequences of Alternatives

**Table 15**. Summary of Alternatives

| **Area** | **Bottomfish FMP** | **Crustaceans FMP** | **Precious Corals FMP** |
|---|---|---|---|
| **CNMI** | 1. No Action | 1. No Action | 1. No Action |
| | 2. Include CNMI assub-areain Bottomfish FMP, with no Federal permitting or reporting requirements **(Preferred Alternative)** | 2. Include CNMI in Permit Area 3 in Crustaceans FMP and under existing Federal permit and reporting requirements **(Preferred Alternative)** | 2. Include CNMI in Precious Coral FMP as exploratory area X-P-C, under exisiting permit, reporting and quota requirements **(Preferred Alternative)** |
| | 3. Include CNMI as sub-area in Bottomfish FMP, with Federal permitting and reporting requirements | N/A | N/A |
| **PRIA** | 1. No Action | 1. No Action | N/A |
| | 2. Include the PRIA as sub-area in Bottomfish FMP, with no Federal permitting or reporting requirements | 2. Include PRIA in Permit Area 3 in Crustaceans FMP and under existing Federal permit and reporting requirements | N/A |
| | 3. Include the PRIA assub-areain Bottomfish FMP, implementing new Federal permitting and reporting requirements (**Preferred Alternative)** | 3. Include PRIA in new Permit Area 4 in Crustaceans FMP, under existing Area 3 Federal permit and reporting requirements **(Preferred Alternative)** | N/A |

#### 6.1.4.1 Impacts on Target and Non-target Species

None of the alternatives examined here (including the preferred alternatives) are anticipated to increase fishing effort, or to encourage the use of destructive gears or other activities that would negatively impact the sustainability of target or non-target species. Under some of the no-action alternatives, which were not identified as the preferred alternatives, fishing effort and gear types in the affected fisheries could expand and there would be no mechanism in place to manage these activities. In addition, some of the no-action alternatives, which were not identified as the preferred alternatives, would not increase the collection of fishery dependent data or prohibit the use of destructive gear types.

#### 6.1.4.2 Impacts on Habitat, Including Essential Fish Habitat and Habitat Areas of Particular Concern

**Adverse impacts to EFH from fishing activities**

Although the predominant fishing gear type used in the CNMI bottomfish fishery is hook-and-line, which causes few fishing-related impacts to the benthic habitat. Alternatives (including the preferred alternative) that would include CNMI and the PRIA in the Bottomfish FMP would prohibit the use of bottom trawls, bottom-set nets, explosives and poisons. This would have potentially positive impacts on EFH and HAPC.

Alternatives (including the preferred alternatives) that would include CNMI in the Precious Corals FMP would require any future harvest to be conducted with selective gear. As non-selective gear, such as tangle nets, indiscriminately damages the benthic habitat, these alternatives offer increased protection from those potentially adverse impacts.

Alternatives (including the preferred alternatives) that would include CNMI and the PRIA in the Crustaceans FMP would limit the type and amount of traps that could be used. Although lobster traps have a potential impact on the benthic habitat, the tropical lobster *Panulirus penicillatus* does not enter lobster traps. In the limited areas where harvesting does occur in the CNMI and the PRIA, lobsters are caught by hand. Under these alternatives, NMFS would have a foundation for restricting the use of traps in sensitive EFH areas. This technique causes limited damage or no fishing-related impacts to the benthic habitat, and its continued use is likely. However, inclusion in the Crustaceans FMP will allow further regulatory controls if needed.

Based on the best available information, current management measures to protect fishery habitat are adequate at this time. However, the Council has identified the following potential sources of fishery-related impacts to benthic habitat that may occur during normal fishing operations:

- Anchor damage from vessels attempting to maintain position over productive fishing habitat.
- Heavy weights and line entanglement occurring during normal hook-and-line fishing operations.

- Remotely operated vehicle tether damage to precious coral during harvesting operations.

Trash is sometimes discarded by fishing vessels operating in the EEZ and fishing hardware, such as leaders, hooks and weights are occasionally lost after becoming snagged on the bottom. The Council determined that the effects of this limited marine debris on habitat are not adverse.

Under the rejected no-action alternatives, PRIA and CNMI fisheries would not be included in the Council's FMPs, no new permitting or reporting requirements would be implemented, and no mechanism for future management actions would be established. As populations increase, there will be increased fishing pressure and an associated potential adverse impact on EFH and HAPC.

**Adverse impacts to EFH from non-fishing activities**

The Council considered a wide range of non-fishing activities that may threaten important properties of the habitat utilized by managed species and their prey, including dredging, dredge material disposal, mineral exploration, water diversion, aquaculture, wastewater discharge, oil and hazardous substance discharge, construction of fish enhancement structures, coastal development, introduction of exotic species and agricultural practices. A 23 page description of non-fishing impacts was presented and approved in the SFA amendment and are not repeated here. Please refer to that document (WPRFMC 2002)for further information.

### 6.1.4.3 Impacts on Public Health and Safety

None of the alternatives (including the preferred alternatives), are anticipated to have adverse impacts on public health or safety because they are not anticipated to result in significant changes in current fishery operations. Over time, the no-action alternatives, could result in active and unregulated fisheries with the potential for unsafe fishing or harvesting practices.

### 6.1.4.4 Impacts on Threatened and Endangered Species, Including Marine Mammals

Impacts of the fisheries affected by these alternatives (including the preferred alternatives) are poorly documented, but based on the target species, types of gear used, and low interaction rates found in similar fisheries in Hawaii, none of the fisheries are believed to adversely impact threatened or endangered species, including marine mammals. In addition, none of the action alternatives (including the preferred alternatives) are anticipated to increase current fishing effort, or to encourage the use of destructive gears or other activities that would negatively impact threatened or endangered species, including marine mammals. Under the no-action alternatives, fishing effort and gear types in the affected fisheries could expand and there would be no mechanism in place to manage these activities. In addition, failure to include CNMI and the PRIA in all Council FMPs (no action) may result in their continued exclusion from consultations under the Endangered Species Act.

#### 6.1.4.5 Impacts on Biodiversity and Ecosystem Function

None of the action alternatives (including the preferred alternatives) are expected to have adverse impacts on biodiversity and ecosystem functions (e.g., benthic productivity, predator-prey relationships etc.) within the affected areas, because they are not expected to lead to substantial changes in current effort or catch levels, or lead to changes in fishing operations that would significantly alter harvests or the composition of fish bycatch. Under the no-action alternatives, fishing effort and gear types in the affected fisheries could expand and there would be no mechanism in place to manage these activities. In addition, the no-action alternative would not increase the collection of fishery dependent data or prohibit the use of destructive gear types.

#### 6.1.4.6 Social and Economic Impacts

Impacts on fishery participants of the action alternatives would be greatest for those that include permitting, reporting and precious coral quota requirements. However, even the most restrictive of these alternatives would be anticipated to have minor effects as the required changes would be administrative (requirements to obtain Federal permits and submit Federal logbooks). Impacts of the precious corals quota are similarly anticipated to be minor as there are no known beds in the CNMI or PRIA. If significant beds were found, the Precious Corals FMP provides a mechanism to revise quotas based on known abundance. Under the no-action alternatives, fishing effort and gear types in the affected fisheries could expand and there would be no mechanism in place to manage these activities, potentially resulting in adverse impacts to fishery participants, fishing communities, and the nation.

### 6.1.5 Reasons for Choosing the Preferred Alternatives

#### 6.1.5.1 Inclusion of CNMI in the Bottomfish and Seamount Groundfish FMP

**Alternative 1A - No Action**

Currently, only non-commercial fishing regulations are in force in CNMI (Appendix 1). Although the “CNMI Fisheries Act”, drafted in 1997, and revised in 2000, would allow for the implementation of CNMI commercial fishing regulations, it has not yet been passed by the local legislature. Additionally, commercial fishing regulations drafted by the Division of Fish and Wildlife (DFW) in 1993 have not been enacted.

The DFW does not issue permits. Although a “permit” can be issued for large vessels, this is actually a business license issued by the local commerce department. Although the DFW has attempted to attach conditions to these business licenses to allow for the sampling of the catch, this has not always been successful (M. Trianni, CNMI-DFW, pers. comm.).

Under the no-action alternative, fishery data would continue to be obtained through creel surveys and the CPD. While large vessels, mostly fishing in the Northern Islands, catch approximately 60% of reported bottomfish (with as high as an 80% catch reporting rate), most of these data are gathered through the CPD, resulting in low specificity in reporting. Large vessels have agreed to

voluntarily submit supplemental data to the DFW. These additional data are the fishing location (obtained from the vessels float plan) and effort in fish per line-hour (obtained from an interview with the captain or from a DFW logbook form filled out by the captain). The catch is sampled by DFW employees at port; they enumerate the catch by species and take length-frequency data. There are no locally proposed measures to increase reporting.

Since 1994 large vessel commercial bottom-fishery effort has slowly increased and there were more vessels fishing in the Northern Islands in 2002 than in previous years. With the limited viable bottomfish habitat, the Northern Islands fishery would be able to sustainably support a limited number of large vessels. Overcapitalization, followed by overfishing to recoup investment, is a real concern which may not be adequately addressed under the local management regime. In addition, although it is likely that data collection from the large vessels would continue, the lack of an FMP regulatory regime makes it difficult to ensure voluntary compliance and, more broadly, the longevity of data gathering efforts.

The Council rejects this no action alternative for the following reasons: (1) the increase of effort in the Northern Islands, especially around FDM; (2) the lack of comprehensive commercial regulations which could lead to destructive fishing practices; (3) the inconsistency of the creel surveys and the voluntary nature of the large vessel data submission; and (4) the concern for uncontrolled overcapitalization of large vessels in the Northern Island fishery.

**Alternative 2A (Preferred Alternative) - Include the CNMI EEZ as a management sub-area under the Bottomfish and Seamount Groundfish FMP, with FMP regulations applied to the offshore area (3 to 200 nm), with no Federal permitting or reporting requirements.**

Under this preferred alternative, the Federal waters around the CNMI, from 0 to 200 nm, would become a defined management sub-area under the Bottomfish FMP. Fishing for Bottomfish MUS in the offshore area (3 to 200 nm) would be subject to Federal regulations. In the future, if necessary, new area-specific Federal regulations, including permitting and reporting requirements could be instituted. In addition to the measures contained in this document, the Council has recommended that large commercial bottomfish fishing vessels be prohibited from fishing within approximately 50 miles of the southern islands.

The small boat fishery relies heavily on reef fish and the shallow-water bottomfish complex for their livelihood. This alternative allows these small vessels to continue operating in nearshore waters without an added regulatory burden and supports local government control over the inshore fishery (0 to 3 miles). This preferred alternative defers to the CNMI government’s regulation of its local fishermen and vessels in the bottomfish inshore management subarea. Local regulations, such as prohibiting bottom trawl nets and other types of nets and the controlled issuance of business licenses for participating in the Northern Islands bottomfish fishery, are examples of CNMI’s current management program which is consistent with and supportive of the conservation and management objectives of the Bottomfish FMP. To date there has been little, if any, bottomfishing activity by non-local fishermen in the inshore management subarea. Therefore, at this time the Council does not contemplate the development of a Federal regulatory regime for this fishing sector, although the Council may do so, if necessary.

Affected vessel operators would be subject to Federal regulations for the bottomfish fishery enumerated in Part 665 of Title 50 in the CFR. These include:

- Requiring any person who is required by state laws and regulations to maintain records of landings and sales from vessels regulated by western Pacific fisheries regulations to make those records immediately available for Federal inspection and copying upon request by an authorized officer.
- Displaying an official vessel identification number on board that is visible from enforcement vessels and aircraft
- Prohibiting fishing for bottomfish MUS with bottom trawls or bottom set gillnets
- Prohibiting the possession of bottom trawls or bottom set gillnets
- Prohibiting the use of poisons or explosives to harvest bottomfish MUS
- Requiring vessels to carry NMFS observers when requested to do so by the Regional Administrator

It is not expected that a substantial new regulatory burden would result; most of the regulations that apply to all subareas concern monitoring of catch, which would continue to be carried out by the DFW with help from the Western Pacific Fisheries Information Network (WpacFIN). Further changes to the regime in the CNMI would involve local scoping and input from fishery participants, in accordance with normal Council procedures. Nonetheless, if the fishery changes or data collection falters, the inclusion of the CNMI EEZ as a management sub-area under the Bottomfish FMP would allow relatively streamlined implementation of needed management measures through the framework process.

There are no anticipated effects on the physical environment from the inclusion of CNMI in the bottomfish FMP. Conversely, it is likely that these measures would improve NMFS' ability to monitor effects to the physical environment.

In summary, the Council chose this as the preferred alternative for the following reasons: (1) including the fishery in the Bottomfish FMP allows for future management controls, as necessary, (2) if current data collection methods become inadequate or data needs change as the fishery develops, the Council could recommend more appropriate data submission by the fishery, (3) inshore fisheries would continue to be managed effectively by CNMI management measures (both present and future).

**Alternative 3A - Include the CNMI EEZ as a management sub-area under the Bottomfish and Seamount Groundfish FMP, with FMP regulations applied to the offshore area (3-200 nm) implement new Federal permitting and reporting requirements for large commercial vessels targeting BMUS.**

Large commercial vessels have caught up to 60% of the reported commercial CNMI bottomfish landings. The Large Vessel Bottomfish fishery of the CNMI report (Trianni, 1998a) concluded that the Northern Island bottomfish fishery would probably expand in the coming years. The report also recognized that because the banks where fishing effort is concentrated are isolated from one another, they should be managed separately. These two factors, as well as the high likelihood that technologically advanced vessels would become more efficient at exploiting this stock, gives merit to this alternative which would allow increased data collection as well as facilitating future adaptive management.

It is envisioned that permitting requirements would not be overly burdensome and data reporting could be patterned after the requirements for the NWHI limited entry bottomfish fishery, simplifying implementation. Which areas, or what size vessels, would require a permit has not been fully elucidated. Since there is not an immediate problem with data collection or overcapitalization, the Council feels that this issue can be addressed in the future as more information is available.

The Council rejected this alternative for the following reasons: (1) data collection by the DFW is currently adequate and vessel operators have been voluntarily complying for a number of years; and (2) this alternative can be implemented at a later date if warranted. [Note: subsequent Council recommendations would require Federal reports from all commercial bottomfish vessels.]

### 6.1.5.2 Inclusion of CNMI in the Crustaceans FMP

**Alternative 1B - No Action**

Without action the crustacean fishery in the CNMI would not be subject to Federal regulation. Currently, this fishery is relatively small and for the most part a non-commercial endeavor involving divers hand-catching their prey. CNMI has regulations for recreational lobster harvest, which would be augmented by the pending Fisheries Act provisions. According to CNMI DFW fishing regulations, “It shall be prohibited and deemed unlawful to take or to be in possession of any lobster”

A. Which measures less than three (3) inches (76.2mm) in length measured in a straight line along the carapace from the ridge between the (2) largest spines above the yes, back to the rear edge of the carapace; or

B. Which carrying eggs; or

C. Which has been stripped of her eggs; or

D. Harvested by spear or any method other than by hand.

(Part V of the Non-Commercial Fish & Wildlife Regulations Section 70.1)

Because of the largely recreational nature of the lobster fishery, and its location in nearshore waters, impacts of this alternative would not be very different from the action alternatives that would actively manage offshore waters. However, the deepwater shrimp *(H. laevigatus*), is likely to occur beyond three miles from shore and could be fished commercially. Various studies – the NMFS Resource Assessment Investigation Of the Mariana Archipelago stock assessments, and NMFS Honolulu Lab analysis of capture data from fishing ventures in 1995-1996 suggests that there is no substantial recreational or commercial fishery, likely due to low catch rates.

Based on the above, it could be argued that there is no apparent need for Federal management. However, the Council rejected the no-action alternative because a lack of Federal management authority would delay future implementation of adaptive management controls or assistance with new monitoring, enforcement, fisheries research or development needs.

**Alternative 2B (Preferred Alternative) - Include the CNMI EEZ in Permit Area 3 under the Crustaceans FMP with FMP regulations applied to the offshore area (3 to 200 nm), including existing FMP Permit Area 3 permit and reporting requirements.**

Taking the jurisdictional issues discussed above into account, the Council recommended including the CNMI EEZ in Permit Area 3 under the Crustaceans FMP with regulations applied to the offshore area (3 to 200 nm). Permit Area 3 currently consists of EEZ waters around American Samoa and Guam. Including CNMI waters in this permit area is appropriate because the nature and development of crustacean fisheries is similar in all three of these areas.

The crustacean fishery is not heavily regulated in Permit Area 3. As described above for the bottomfish fishery, there are some general regulations in Subpart B of Part 665 of the Code of Federal Regulations that apply to all Federally managed fisheries in the Western Pacific. Again, the most pertinent general requirements pertain to reporting. Regulations specific to the crustacean fishery that apply to existing Permit Area 3 include requirements for:

- Federal permits
- Completion and submission of Federal logbooks
- Completion and submission of Federal sales reports
- Submission of packing or weigh-out slips
- Advance reporting (24 to 36 hours prior to arrival) of the landing port, date and time of any permitted vessel carrying spiny or slipper lobsters, as well as the location and time of offloading any spiny or slipper lobsters (6 to 12 hours beforehand)

- Displaying of an official vessel identification number on board that is visible from enforcement vessels and aircraft

- At-sea observer coverage when requested by the Regional Administrator

Any concern that inclusion would impose an undue burden on current small-scale lobster fishing around the CNMI is obviated by the specification of the regulated area to waters in the offshore zone. These activities occur almost exclusively in inshore waters and thus, local regulations would continue to apply. This preferred alternative defers to the CNMI government's regulation of its local fishermen and vessels in inshore waters 0 to 3 nm. Local regulations governing the taking of lobster (e.g., harvest size limits, reproductive condition, harvest method restriction) are consistent with and supportive of the conservation and management objectives of the Crustaceans FMP. To date there has been little, if any, lobster harvesting activity by non-local fishermen in the inshore waters around CNMI. Therefore, at this time the Council does not contemplate the development of a Federal regulatory regime for this fishing sector, although the Council may do so, if necessary.

In summary, the Council recommends inclusion of EEZ waters around the CNMI in the Crustaceans FMP to increase data collection and to allow for future adaptive management and assistance as necessary.

#### 6.1.5.3 Inclusion of the CNMI in the Precious Coral FMP

**Alternative 1C - No Action**

While no domestic precious coral industry exists in the CNMI, new technology that has been used in Hawaii could be adopted to develop such a fishery in the future. However without Council action any potential fishery could be stymied by local regulations that prohibit the collection of all types of coral, including those beyond 3 nm. While this regulation is apparently intended to protect reef-building stony corals, its language ("Collection of Hard Corals-The collection and/or removal from the waters of the CNMI of any and all species of hard hermatypic reef building corals, soft corals or stony hydrozoans, is prohibited." [Part V of the Non-Commercial Fish & Regulations Subsection 30.1] and "Disruption of habitat-Disturbance of coral, dead or alive, is prohibited," [Part V of the Non-Commercial Fish & Regulations Subsection 10.4)]) may be interpreted to include precious corals.

A recently enacted regulatory amendment (FR Vol. 67 11941, 18 March 2002) prohibits the use of non-selective gear for precious coral harvest in all areas under the Council's jurisdiction. Under the no-action alternative, this prohibition does not apply to CNMI and it might be possible to use tangle nets or other non-selective gear in CNMI waters. This type of gear can severely damage benthic habitat.

Foreign poaching for precious coral has occurred throughout the Pacific. Because of their remoteness, the CNMI Northern Islands, especially north of 18 degrees, are particularly vulnerable to poaching. Although inclusion of CNMI waters under Federal management by no

means ensures detection, it would facilitate Federal monitoring and enforcement where local capabilities are insufficient.

The Council rejected the no-action alternative because: (1) the potential for a precious coral fishery in the CNMI is increasingly more likely given the current state of technology and demands from Asia and thus is more likely to be threatened by destructive or unsustainable fishing practices; (2) current CNMI regulations appears to inadvertently prohibit the harvest of precious corals; and (3) the potential expansion of the fishery into CNMI requires both active monitoring and a mechanism for adaptive management.

**Alternative 2C (Preferred Alternative) - Include the CNMI EEZ in the Precious Coral FMP as exploratory area X-P-C, with FMP regulations applied to the offshore area (3-200 nm) including existing FMP exploratory area permit and reporting and quota requirements.**

Regulations specific to the precious corals fishery that apply to existing exploratory areas and would be implemented for new exploratory area X-P-C include requirements for:

- Federal permits
- Completion and submission of Federal logbooks
- Use of selective gear only (no tangle nets, dredge etc.)
- Annual total harvest quota of 1000 kg (all species combined, except black coral)
- Minimum size of 10” height for harvest of live pink coral
- Minimum size of 1”stem diameter or 48” height of for harvest of live black coral
- Displaying of an official vessel identification number on board that is visible from enforcement vessels and aircraft

This alternative would include the EEZ waters around the CNMI in the Precious Corals FMP. Inclusion in the FMP as exploratory area X-P-C would apply the existing 1,000 kg annual quota (all species combined except black coral) for each exploratory area to new area X-P-C. By including CNMI in the FMP, current regulations regarding destructive fishing practices will be applied. In the future framework measures can be used to designate discrete beds and bed quotas, based on growth, size and reproductive capability.

The Council chose this alternative because: (1) the potential for a precious coral fishery in the CNMI is increasingly more likely given the current state of technology, and continuing demands from Asia markets; (2) current CNMI regulations inadvertently prohibit the harvest of precious corals; and (3) the potential expansion of the fishery into CNMI requires both active monitoring and a mechanism for adaptive management.

This preferred alternative defers to the CNMI government’s regulation of its local fishermen and vessels in inshore waters 0 to 3 nm. Local regulations governing the taking of hard reef building,

and soft corals are consistent with and supportive of the conservation and management objectives of the Precious Corals FMP. To date there has been little, if any, precious coral harvesting activity by non-local fishermen in the inshore waters around CNMI. Therefore, at this time the Council does not contemplate the development of a Federal regulatory regime for this fishing sector, although the Council may do so, if necessary.

#### 6.1.5.4 Inclusion of the PRIA fisheries in the Bottomfish FMP

**Alternative 1D - No Action**

Historically, only Hawaii-based troll and handline vessels have harvested bottomfish management unit species in the PRIA. Although there has been minimal fishing pressure, managers have become concerned because without Federal permit and reporting requirements there is little detailed information on bycatch, protected species interactions, and catch and effort. The State of Hawaii is revising all of its commercial fishery data forms including one that vessel operators fishing in the PRIA and landing their catch in Hawaii would fill out. On the revised forms the State plans to include (1) effort measured by fishing hours, (2) effort measured by number of lines fished, (3) the release of non-target species (bycatch), and (4) the loss of target species to predation. However vessels that do not land fish in Hawaii will not be subject to this reporting requirement. In addition, fishing location data will remain generalized, and protected species interactions are not expected to be included in these forms. Protected species found on Palmyra include nesting green sea turtles, hawksbill turtles, pilot whales and bottle-nosed dolphins. Monk seals have also been seen occasionally around Johnston, Palmyra and Wake Islands. According to US customs law, goods entering from the PRIA are subject to the same inspection procedures as those imported from a foreign country. As result, fish arriving at Honolulu are inspected by customs officials. However, these officials would not collect data needed for fishery management. [Note: the above changes to Hawaii's commercial data forms were implemented following the Council's final action on the measures discussed here.]

Development of fisheries in these areas to date has been hindered by the lack of air freight and vessel services. With the recent improvements to Palmyra's 6,500 foot airstrip and discussion to allow increased air traffic for various purposes, it is now possible to ship fresh fish and/or live crustaceans out of the PRIA to Hawaii. (Only small planes are able to land on Palmyra Atoll, as they are unable to make longer flights needed to reach other airports.) In addition, the Coral Reef Ecosystem Reserve Executive Orders 13178 and 13196 (issued December 4, 2000 and January 19, 2001) closed some commercially important bottomfish fishing areas around Hawaii. This may spur fishermen to explore new fishing grounds, with Palmyra being a logical first step. While these developments could allow the fishery to expand to new areas, they also create a possible loophole in data collection and monitoring. According to US customs law, goods entering from the PRIA are subject to the same inspection procedures as those imported from a foreign country. As result, fish arriving at Honolulu are inspected by customs officials. However, these officials would not collect fishery management data and no system is in place to ensure fishery data collection. [Note: attempts to establish a private airstrip and fish transshipping station at Palmyra faltered following the Council's final action on the measures discussed here

and Palmyra was subsequently bought by the Nature Conservancy which is unlikely to reinitiate these efforts.]

To date, vessels from American Samoa, Guam and the CNMI have not fished for bottomfish in the PRIA. Should vessels based in one of these areas fish for bottomfish in the EEZ of the PRIA, the Council would have to rely on local data collection systems to document this fishing effort. This approach would be complicated because these island areas' data collection systems are not designed to systematically collect information on distant water fishing operations.

If the Council does not include the PRIA under the Bottomfish FMP, vessels can bottomfish virtually unregulated since currently there are no Federal restrictions on bottomfish fishing in the PRIA. Inclusion in the Bottomfish FMP would also prohibit the use of destructive fishing practices (defined and prohibited in 50 CFR 665.62 and 665.64) throughout the PRIA EEZ.

The Council rejected the no-action alternative because: (1) failure to include the PRIA in the Bottomfish FMP would allow the use of destructive fishing gears; and (2) without inclusion of the PRIA in the Bottomfish FMP there is no basis to implement further management controls when and if needed.

**Alternative 2D - Include the PRIA EEZ as a management sub-area in the Bottomfish and Seamount Groundfish FMP, with no Federal permitting or reporting requirements.**

Under Alternative 2, affected vessels would be subject to Federal regulations for the bottomfish fishery enumerated in Part 665 of Title 50 in the CFR. These include:

- Requiring any person who is required by state laws and regulation to maintain records of landings and sales for vessels regulated by western Pacific fisheries regulations to make those records immediately available for Federal inspection an copying upon request by an authorized officer
- Displaying an official vessel identification number on board that is visible from enforcement vessels and aircraft
- Prohibiting fishing for bottomfish MUS with bottom trawls or bottom set gillnets
- Prohibiting the possession of bottom trawls or bottom set gillnets
- Prohibiting use of poisons or explosives to harvest bottomfish MUS
- Allowing for at-sea observer coverage when requested to do so by the Regional Administrator

As already indicated, the best available information suggests that all of the fish caught in the PRIA (excepting fish caught for personal consumption by military base residents) are currently landed in Hawaii. The State of Hawaii has for many years been in the process of revising its catch report forms to gather more data that supports fisheries management. It is unclear when the new forms would be put into effect. Relying on state data collection was determined inadequate

for pelagic species caught in the area and Federal permitting and reporting requirements have been implemented. In addition to the reasons outlined in the discussion of the no action alternative, relying on data collection through the state catch report forms does not address a number of issues for which the Council has concern. These include a lack of documentation of interactions with protected species and a lack of coordination in data collection and processing.

The Council rejected this alternative because: (1) the potential expansion of the fishery into the PRIA requires both active monitoring and a mechanism for adaptive management; and (2) current reporting systems may not include adequate information for fishery management, including detailed effort, protected species interactions and bycatch data.

**Alternative 3D (Preferred Alternative) - Include the PRIA EEZ as a management sub-area in the Bottomfish and Seamount Groundfish FMP, implement new Federal permitting and reporting requirements for all vessels targeting BMUS.**

The preferred alternative expands on Alternative 2 with new Federal permitting and reporting requirements. In addition to including the PRIA as a sub-area under the Bottomfish FMP, this alternative includes a new requirement for Federal permits and logbooks (this requirement would not apply to Johnston and Wake based recreational fishing as the USFWS monitors these activities). The remaining regulations put forth in the previous alternative to include the PRIA as a Bottomfish FMP sub-area would hold for this alternative as well.

The Council chose this alternative because: (1) the potential expansion of the fishery into the PRIA requires both active monitoring and a mechanism for adaptive management; and (2) Federal logbooks require documentation of protected species interactions, detailed effort and bycatch data while the Hawaii form does not require this data.

### 6.1.5.5 Inclusion of the PRIA in the Crustaceans FMP

**Alternative 1E - No Action**

Over the past few years, fishermen have expressed interest in exploring lobster fishing in the waters around Johnston Atoll and Palmyra Island and developing a red crab fishery in the PRIA. In addition, one venture has explored the deep-water shrimp fishery off Palmyra and intends to return. Therefore, crustacean fisheries would likely expand in PRIA waters.

Because there is no market in the PRIA, catch would most likely be landed in Hawaii. Thus, vessel operators would fill out a state catch report form. The disadvantages of this approach have already been described and include a lack of detailed documentation of bycatch, effort and protected species interactions and a lack of coordination in data collection across the region.

The Council rejected this alternative because: (1) the potential expansion of the fishery into the PRIA requires both active monitoring and a mechanism for adaptive management; and (2) Hawaii catch reports do not include complete information necessary for scientific fishery management, including details on effort, protected species interaction and bycatch data.

**Alternative 2E - Include the PRIA EEZ waters around the PRIA in existing Permit Area 3 under the Crustaceans FMP including existing FMP Area 3 permit and reporting requirements.**

As for the preferred alternative for inclusion of the CNMI in the Crustaceans FMP, this alternative would include the PRIA in Permit Area 3, which currently covers the EEZ waters around American Samoa and Guam. Regulations specific to the crustacean fishery that apply to existing Permit Area 3 include requirements for:

- Federal permits
- Completion and submission of Federal logbooks
- Completion and submission of Federal sales reports
- Submission of packing or weigh-out slips
- Advance reporting (24 to 36 hours prior to arrival) of the landing port, date and time of any permitted vessel carrying spiny or slipper lobsters, as well as the location and time of offloading any spiny or slipper lobsters (6 to 12 hours beforehand)
- Displaying of an official vessel identification number on board that is visible from enforcement vessels and aircraft
- At-sea observer coverage when requested by the Regional Administrator

The Council rejected this alternative because inclusion of the PRIA in Permit Area 3 (which currently consists of EEZ waters around American Samoa and Guam) would hinder the development of discrete management mechanisms for the PRIA.

**Alternative 3E (Preferred Alternative) - Include the PRIA EEZ in new Permit Area 4 under the Crustaceans FMP including existing FMP Area 3 permitting and reporting requirements.**

Creating a new Permit Area 4 specifically for the PRIA allows future management measures to be tailored to the unique characteristics of the PRIA. The above Federal requirements (including permitting and reporting requirements) for Permit Area 3 would be applied to new Permit Area 4.

The Council chose this alternative because the potential expansion of crustacean fisheries, exploratory or otherwise, into the PRIA requires both active monitoring and a mechanism for adaptive management.

### 6.1.5.6 Addition of MUS to the Bottomfish and Seamount Groundfish FMP

**Alternative 1F (Preferred Alternative) - No Action**

Under the no action alternative, data on several important species now being commercially harvested in American Samoa, Guam and CNMI would continue to be collected under the CRE-FMP which was implemented following the Council's final action on the measures discussed above.

**Alternative 2F - Add the species listed in Table 3 as management unit species under the Bottomfish and Seamount Groundfish FMP.**

The Council initially preferred to add several bottomfish management unit species at the family-level so that miscellaneous species and unidentified fish would be monitored and managed. In so doing all bottomfish caught by vessels targeting the deep and shallow-water bottomfish complex would come under the Bottomfish FMP management. However, inclusion of family-level categories was rejected based on recommendations from the Coral Reef Ecosystem Plan Team, which noted that many of the unnamed species in these families are permanent coral reef residents and are not caught by traditional bottomfish gear. To accommodate this concern, the Council voted to add specific species and not family-level categories to the MUS list, with the remaining species in the four family-level categories recommended for inclusion in the Coral Reef Ecosystems FMP.

The Council initially chose this as its preferred alternative because effective management of these species requires their inclusion as management unit species. However these species were subsequently added to the CRE FMP and thus no further action is required at this time.

### 6.1.5.7 Addition of Management Unit Species to the Crustaceans FMP

**Alternative 1G (Preferred Alternative) - No Action**

Although the possibility exists for increased fishing for these species, it is seen as unlikely due to their high harvest costs and market uncertainties. For this reason, the Council elected to take no action on this measure.

**Alternative 2G - Add the deep-water shrimp, *H. laevigatus*, as a management unit species under the Crustaceans FMP**

As this species appears to have the most potential for a commercial fishery in Hawaii, CNMI and the PRIA, the Council considered management measures for it. Because of their habitat and behavioral characteristics, only commercial fishermen target these deepwater shrimp and so far they have voluntarily submitted data.

Despite these concerns and opportunities, the Council rejected designating deepwater shrimp as an MUS at this time because: (1)doing so would not provide any added benefit and possibly result in the duplication of effort as voluntary data collection, coupled with additional research data, is sufficient to monitor this fishery at its present level of development; (2) the fishery has

been self-managing due to prohibitive costs associated with gear loss, inconsistent catch rates, and a fluctuating consumer market; (3) If and when technological advancements allow for an economically viable deep-water shrimp fishery, the species can be added with permit and reporting requirements.

**Alternative 3G - Add all species of the spiny lobster, *Panulirus*, as management unit species under the Crustaceans FMP**

Three non-MUS spiny lobster species (*Panulirus femoristriga, P. ornatus, and P. versicolor*) occur rarely in CNMI waters. Although not as common as the MUS *Panulirus penicillatus*, they are probably caught commercially. Current data collection does not differentiate between lobster species, so their frequency in the fishery is unknown.

The Council rejected the addition of the entire spiny lobster complex to the crustacean MUS list at this time for the following reasons: (1) there are no major crustacean fisheries except the Northwestern Hawaiian Island trap fishery; and (2) voluntary data collection, coupled with additional research data, is sufficient to monitor this fishery at its present level of development.

**Alternative 4G - Add the red crab, *C. granulatus*, and all other *Chaceon* species as management unit species under the Crustaceans FMP**

No fishing operation in the western Pacific region has or is likely to target red crab because they are generally caught along with deep-water shrimp. However, there are directed fisheries for red crab in the Atlantic and Indian Oceans. This crab is commercially valuable and is kept for sale by the shrimp vessel operators. The Council or NMFS does not have specific information on the red crab's economic importance in these fisheries however some biological data do exist.

Available data suggest that this crab is fished under the same limiting factors that restrict the deep-sea shrimp industry, including high a gear loss rate, decreasing CPUE from local depletion, and fluctuating market prices. In conclusion, the Council rejects adding the red crab to the MUS list at this time for the same reasons that the Council rejected adding the deep-water shrimp.

## 6.2 Consistency with National Standards for Fishery Conservation and Management

*National Standard 1 -- Conservation and management measures shall prevent overfishing while achieving, on a continuing basis, the optimum yield from each fishery for the United States fishing industry.*

These amendments are consistent with National Standard 1 because they would reduce the risk of overfishing by including domestic fisheries which offload or operate in Federal waters around the CNMI and PRIA under the FMPs. Future conservation measures under the MSFCMA can only be applied after these regions are included in the respective FMPs. Improved data collection in the PRIA and CNMI would reveal trends and allow managers to pro-actively prevent overfishing.

*National Standard 2 -- Conservation and management measures shall be based upon the best scientific information available.*

These amendments are consistent with National Standard 2 because they would institute Federal reporting requirements in the PRIA for bottomfish and crustaceans. They would also make it possible to implement comprehensive mandatory data collection if voluntary systems currently in place in the CNMI become inadequate.

*National Standard 3 -- To the extent practicable, an individual stock of fish shall be managed as a unit throughout its range, and interrelated stocks of fish shall be managed as a unit or in close coordination.*

These amendments are consistent with National Standard 3 because, although they would not directly affect management practices, by including the CNMI and the PRIA under the Council's jurisdiction, the management of fish stocks throughout their ranges would become more feasible. The additional data collected would also aid in managing fish stocks throughout their range.

*National Standard 4 -- Conservation and management measures shall not discriminate between residents of different States. If it becomes necessary to allocate or assign fishing privileges among various United States fishermen, such allocation shall be (A) fair and equitable to all such fishermen;(B) reasonably calculated to promote conservation; and (C) carried out in such manner that no particular individual, corporation, or other entity acquires an excessive share of such privileges.*

These amendments are consistent with National Standard 4 because they would bring the CNMI and the PRIA under a management regime similar to those in other areas under the Council's jurisdiction without discriminating between residents of different States.

*National Standard 5 -- Conservation and management measures shall, where practicable, consider efficiency in the utilization of fishery resources; except that no such measure shall have economic allocation as its sole purpose.*

These amendments do not address fishery resource utilization, however future management measures could be implemented more efficiently following the inclusion of the CNMI and the PRIA into the relevant FMPs.

*National Standard 6 -- Conservation and management measures shall take into account and allow for variations among, and contingencies in, fisheries, fishery resources, and catches.*

These amendments are consistent with National Standard 6 because they measures are designed in consideration of each area's physical and social environment. Beyond basic regulatory measures (i.e., permitting and reporting) these amendments would not affect current fishery operations.

*National Standard 7 -- Conservation and management measures shall, where practicable, minimize costs and avoid unnecessary duplication.*

These amendments are consistent with National Standard 7 because they would not affect current permitting and data collection systems. Where new permitting and reporting are proposed, for potentially developing fisheries for precious corals and crustaceans in the offshore areas of the CNMI and for bottomfish and crustaceans in the PRIA, these amendments avoid duplication to the extent possible. Fisheries included in the new management areas would simply be

incorporated into existing management systems. Thus, the costs to the U.S. government would be minimal.

*National Standard 8 – Conservation and management measures shall, consistent with the conservation requirements of this Act (including the prevention of overfishing and rebuilding of overfished stocks), take into account the importance of fishery resources to fishing communities in order to (A) provide for the sustained participation of such communities, and (B) to the extent practicable, minimize adverse economic impacts on such communities.*

The major purpose of these amendments is to provide the framework from which to implement management measures in the CNMI and the PRIA in the event regulatory controls are needed. As most of the artisanal and subsistence fishermen fish the inshore areas of CNMI, these amendments separate the inshore area from the offshore area with active management of the inshore area remaining under local control. While permits would be required for the crustacean fishery in the offshore area, permitting and reporting for bottomfish would not change from current practices. These amendments do not affect resource allocation for fishermen or fishing communities.

*National Standard 9 -- Conservation and management measures shall, to the extent practicable, (A) minimize bycatch and (B) to the extent bycatch cannot be avoided, minimize the mortality of such bycatch.*

These amendments are consistent with National Standard 9 because they would facilitate additional data collection on bycatch and retention of bottomfish and crustacean MUS. These amendments would also allow for the implementation of a more detailed data collection program in the future, as needed.

*National Standard 10 -- Conservation and management measures shall, to the extent practicable, promote the safety of human life at sea.*

These amendments are consistent with National Standard 10 because they would require permits and increased monitoring for bottomfish, precious corals and crustacean fishing in CNMI and the PRIA. Information on the operations of these fishing vessels would assist the US Coast Guard in prioritizing their efforts.

### 6.3 Regulatory Flexibility Act

In order to meet the requirements of the Regulatory Flexibility Act, 5 U.S.C. 601 *et seq.* (RFA) requires government agencies to assess the impact of their regulatory actions on small businesses and other small entities via the preparation of Regulatory Flexibility Analyses.

The Regulatory Flexibility Act, 5 U.S.C. 601 *et seq.* (RFA) requires government agencies to assess the impact of regulatory actions on small businesses and other small organizations. The basis and purpose of this rule are described in Section 5.0. Under the preferred alternatives, this rule is anticipated to potentially apply to the approximately 43 currently active bottomfish fishery participants based in CNMI as well as to the unknown number of potential operators of vessels that may enter this fishery in the future. Affected entities will include only those who fish more than three miles from shore. Although available information does not indicate how many

currently active bottomfish participants' fish in these offshore waters, it is likely that most do as this is where the majority of CNMI bottomfish fishing grounds are. Given this fleet's aggregate annual ex-vessel revenues of $142,260 (Table 8) this yields an average annual per vessel of $3,308 and results in all affected operations being classified as "small entities" as their annual revenues are below the $3.5 million threshold set for this determination. Also potentially affected will be future participants in the CNMI-based offshore crustacean and precious coral fisheries. Available information indicates that there are no current participants in these fisheries and it is relatively unlikely that an offshore crustacean (i.e., lobster) fishery will develop as beyond three miles the topography in most locations drops off steeply and lobster habitat is relatively small and access difficult. Also affected will be future participants in the bottomfish and crustaceans fisheries around the PRIA, available information indicates that there are no current participants in these fisheries. Please see Section 9.1.3.4 for more information on these fisheries.

The largest potential impact to affected participants would be the time and costs of new Federal permitting and reporting requirements associated with the preferred alternatives for the CNMI crustaceans and precious corals fisheries, as well as the PRIA bottomfish and crustaceans fisheries. Compliance costs consist of an annual flat rate per vessel for each permit. The cost for these permits has not been determined but for comparison, Hawaii bottomfish permits are renewed annually at a cost of $65. The completion of Federal reporting forms will be required for each fishing trip, with an associated time cost of 35 hours annually. Lesser and unquantifiable impacts may result from the prohibition of the use of destructive fishing gears (e.g., bottom set trawls, poisons and explosives) in the current or future CNMI and PRIA bottomfish fisheries, and the prohibition of the use of non-selective gear in any future CNMI precious corals fishery. There is no evidence that these gears are in use at this time and therefore their prohibition would have no immediate impact on current fishery participants.

Based on the minor impact of these measures on potentially affected current and future fishery participants, this action is not significant (i.e., it will not have a significant impact on a substantial number of small entities) for the purposes of the Regulatory Flexibility Act and no Initial Regulatory Flexibility Analysis has been prepared.

### 6.4 Executive Order 12866

In order to meet the requirements of Executive Order 12866 (E.O. 12866), the National Marine Fisheries Service requires that a Regulatory Impact Review be prepared for all regulatory actions that are of public interest. This review provides an overview of the problem, policy objectives, and anticipated impacts of the action, and ensures that management alternatives are systematically and comprehensively evaluated such that the public welfare can be enhanced in the most efficient and cost effective way. In accordance with E.O. 12866, the following is set forth: (1) This rule is not likely to have an annual effect on the economy of more than $100 million or to adversely affect in a material way the economy, a sector of the economy, productivity, jobs, the environment, public health or safety, or state, local, or tribal governments or communities; (2) This rule is not likely to create any serious inconsistencies or otherwise interfere with any action taken or planned by another agency; (3) This rule is not likely to materially alter the budgetary impact of entitlements, grants, user fees, or loan programs or the rights or obligations of recipients thereof; (4) This rule is not likely to raise novel or policy

issues arising our of legal mandates, or the principles set forth in the Executive Order. Based on these findings, this rule is believed not to be significant under E.O. 12866.

None of the alternatives are expected to have significant impacts or catches of commercial fishermen, nor are they expected to have effects on the catch and effort of charter and recreational fishermen in CNMI and the PRIA. In contrast, these measures enable the Council to effectively and sustainably manage potentially lucrative fisheries for the benefit of fishermen and the industries dependent upon fishing.

### 6.5 Coastal Zone Management Act

The CZMA requires a determination that an FMP or amendment has no effect on the land or water uses or natural resources of the coast zone, or is consistent to the maximum extent practicable with an affected state's approved coastal zone management program. A copy of this document will be submitted to the appropriate agency in the CNMI for their review and concurrence with the Council determination that the amendments are consistent, to the maximum extent practicable, with the state's coastal zone management program. As no coastal zone management plans exist for the PRIA, this will not be done for these areas.

### 6.6 Endangered Species Act

These actions will not adversely affect any of the ESA listed species below or critical habitat necessary for the continued existence of those species. The actions contained in this document are primarily administrative and do not permit any activities beyond those presently occurring. The actions are likely to positively benefit ESA listed species through additional information gathered on fishing effort and through reporting requirements. As the actions described in this document do not implement activities that would result in the incidental taking of any ESA listed species, no formal consultation under Section 7 of the ESA is required.

For further discussion of ESA listed species found in the areas under consideration by this action, refer to Section 9.1.3.6.

### 6.7 Marine Mammal Protection Act

As noted in Section 9.1.3.6 it is unlikely that the proposed management measure in this document would have an impact on any species of marine mammals that occur in the Western Pacific region.

The western Pacific FMP fisheries detailed in this amendment are classified as Category III under the MMPA, and are thus defined as having a remote likelihood of killing or seriously injuring marine mammals, incidental to their operations. While a variety of marine mammals can occur in the vicinity of fishing operations, the type of gears and techniques used in these fisheries are such that they are not likely to lead to serious injury or fatal interactions.

For further a further discussion of marine mammals and species lists, refer to Section 9.1.3.6.

### 6.8 Paperwork Reduction Act

The purpose of the PRA is to minimize the burden on the public. The Act is intended to ensure that the information collected under the proposed action is needed and collected in an efficient manner (44 U.S.C. 3501(1)).

### Proposed Data Collection Program

Aspects of the Council's preferred alternatives that would include CNMI and the PRIA in the various FMPs require some additional paperwork. As outlined in Table 16, owners of vessels would be required to obtain a Federal permit and register it to any vessel they intend to use to fish for crustaceans or precious corals in the CNMI or for bottomfish or crustaceans in the PRIA. These permitting requirements are not duplicative and reflect permitting requirements in other areas under Council jurisdiction. Reporting requirements for these areas would likely include types and quantity of gear used, units of gear set, time at start and end of set, numbers and pounds and of species kept, numbers released, catch from other methods of fishing used, area(s) fished, length of the trip, average weather conditions, depth of area fished, observed damage to coral reef, and protected species interactions.

Under the preferred alternatives, new reporting requirements would be introduced for fishing for bottomfish and crustaceans in the PRIA, and for crustaceans and precious corals in CNMI.

The estimated paperwork burden for the permit application process is 30 minutes per application. In the crustacean fishery, CNMI and the PRIA would be added to Permit Area 3 (which currently includes American Samoa and Guam). It is estimated that one permit application would be submitted annually for this area, resulting in a paperwork burden of 30 minutes per year for the crustacean fishery. In the bottomfish fishery, the PRIA would be included with Guam in the western Pacific area. It is estimated that no more than five permit applications would be received annually for this area, resulting in a paperwork burden of 2.5 hours per year. In the precious coral fishery, CNMI would be added to the exploratory areas (which already include Hawaii, American Samoa, and the U.S. Pacific Island Possessions). It is estimated that no more than five permits would be applied for annually for this area, resulting in 30 minutes per year additional paperwork burden. Therefore, the total paperwork burden of these collections of information would be no more than 5 hours annually.

The estimated paperwork burden for the reporting requirement is five minutes per daily logsheet. It is estimated that eight vessels would be subject to the reporting requirement at any given time, and that each vessel would fish, on average, no more than 50 days each year, resulting in a total paperwork burden of approximately 35 hours per year.

**Table 16. Paperwork Requirements**

| **AREA/FMP** | | |
|---|---|---|
| CNMI/bottomfish | **New permit requirements?** | **New reporting requirements?** |
| | **No.** Continue to follow existing DFW requirement | **No.** Continue to follow existing DFW requirement |
| CNMI/crustaceans | **Yes.** Follow existing Federal "Area 3" permit requirement | **Yes.** Follow existing Federal "Area 3" reporting requirements (logbook, sales, weigh-out, notifications) |
| | **Number permits = 1** | **Number trips = 5/vessel** |
| | **Burden: 30 min/year** | **Burden 25 min/vessel** |
| CNMI/Precious Corals | **Yes.** Follow existing Federal "exploratory area" permit requirement | **Yes.** Follow existing Federal reporting requirements (logbook only) |
| | **Number permits = 1** | **Number trips = 2/vessel** |
| | **Burden: 30 min/year** | **Burden: 10 min/vessel** |
| PRIA/bottomfish | **Yes.** New Federal permit requirement | **Yes.** New Federal reporting requirement |
| | **Number permits = 5** | **Number trips = 5/vessel** |
| | **Burden: 2h 30 min/year** | **Burden: 25 min/vessels** |
| PRIA/crustaceans | **Yes.** Follow existing Federal "Area 3" permit requirement | **Yes.** Follow existing Federal "Area 3" reporting requirements (logbook, sales, weigh-out, notifications) |
| | **Number permits = 1** | **Number trips = 2** |
| | **Burden: 30 min/year** | **Burden: 10 min/vessel** |

### 6.9 Executive Order 12612 (Federalism)

As is the case under the Coral Reef Ecosystem FMP (WPRFMC 2001), these amendments would defer management in waters 0 to 3 nm from shore to CNMI authorities while actively managing fisheries in waters 3 to 200 nm from shore.

### 6.10 Executive Order 12630 (Takings)

These inclusive amendments affecting marine fishery resources in Federal waters which offload or operate in Federal waters around CNMI and the PRIA will allow those fisheries to be regulated under the MSFCMA. The relevant FMPs outline restrictions on the use of destructive fishing gears. These include for bottomfish: bottom trawls, bottomset gillnets, poisons or explosives; and for precious coral: non-selective gear. These gears are not currently being used in the areas affected by the proposed these amendments and their prohibition should not be considered a taking under E.O. 12630.

### 6.11 Executive Order 13089 (Coral Reef Protection)

Executive Order 13089 on Coral Reef Protection directs Federal agencies to use their authorities to protect coral reef ecosystems and, to the extent permitted by law, prohibits them from authorizing, funding or carrying out any action that would degrade these ecosystems. The regulatory measures in this document are consistent with the objectives and recommendations of this Executive Order, since there will be increased monitoring and control of activities (e.g limits on destructive gear for catching bottomfish and harvesting precious corals), that may affect coral reef ecosystems.

### 6.12 Traditional Indigenous Fishing Practices

The PRIA have been unoccupied for all of modern times, with the exception of a military presence on Johnston and Wake, and there are no documented traditional indigenous fishing practices on the islands. By deferring the management of the nearshore waters (0 to 3 nm) to the CNMI, regulations and development of traditional local fishing to be determined by those most knowledgeable. Most traditional fishing occurs on the reef or nearshore waters with pole and line or various types of nets. In interviews with local CNMI fishermen, most stated that they never fished beyond 3 nm as their vessels could not reach the offshore seamounts or Northern Islands. These amendments do not change any of these fishing practices.

### 6.13 Essential Fish Habitat Consultation

Based on the above information, the preferred alternatives are not expected to have adverse impacts on EFH or HAPC for species managed under the Pelagics, Bottomfish and Seamount Groundfish, Precious Corals, Crustaceans, or Coral Reef Ecosystems Western Pacific FMPs. EFH and HAPC for these species groups has been defined as presented in Table 14. The preferred alternatives will not adversely affect EFH or HAPC for any managed species as they are not likely to lead to substantial physical, chemical, or biological alterations to the habitat, or

result in loss of or injury to, these species or their prey. For the same reason, the preferred alternatives are not anticipated to cause substantial damage to the ocean and coastal habitat

### 6.14 Information Quality Act

To the extent possible, this information complies with the Information Quality Act and NOAA standards (NOAA Information Quality Guidelines, September 30, 2002) that recognize information quality is composed of three elements - utility, integrity and objectivity. Central to the preparation of these amendments is objectivity which consists of two distinct elements: presentation and substance. The presentation element includes whether disseminated information is presented in an accurate, clear, complete, and unbiased manner and in a proper context. The substance element involves a focus on ensuring accurate, reliable, and unbiased information. In a scientific, financial, or statistical context, the original and supporting data shall be generated, and the analytic results shall be developed, using sound statistical and research methods.

At the same time, however, the Federal government has recognized, "information quality comes at a cost. In this context, agencies are required to weigh the costs and the benefits of higher information quality in the development of information, and the level of quality to which the information disseminated will be held." (OMB Guidelines, pp. 8452-8453).

One of the important potential costs in acquiring "perfect" information (which is never available), is the cost of delay in decision-making. While the precautionary principle suggests that decisions should be made in favor of the environmental amenity at risk, this does not suggest that perfect information is required for any preferred alternative to proceed. In brief, it does suggest that caution be taken but that it not lead to paralysis until perfect information is available. This document has used the best available information and made a broad presentation of it. The process of public review of this document provides an opportunity for comment and challenge to this information, as well as for the provision of additional information.

## 7.0 Future Research and Monitoring

Over the past eight years, (following the Council's final action on the measures discussed here), the Coral Reef Ecosystem Division of NOAA's Pacific Islands Fisheries Science Centre (in collaboration with NOS and the University of Hawaii) has collected a detailed and accurate set of bathymetry data for CNMI. Their next goal is to complete the processing of that data. Researchers on the NOAA research vessel Oscar Settee have been, and will continue to, collect and process extensive data on habitat characterisation and mapping information on the coral reef ecosystems around the PRIA. Data on water temperature, salinity and currents are being collected through in-water surveys as well as from moored buoys. Inclusion of waters around the PRIA and CNMI in the FMPs will ensure that active fisheries are monitored for landings, bycatch and protected species interactions. The Council continues to recommend that NOAA take full advantage of opportunities to work with commercial fishermen and develop cooperative research projects to benefit management.

## 8.0 Proposed Regulations

List of Subjects in 50 CFR Part 665

Administrative practice and procedure, American Samoa, Fisheries, Fishing, Guam, Hawaiia Natives, Northern Mariana Islands, Pacific Remote Island Areas and Reporting and recordkeeping requirements.

Dated:

_____

For the reasons set out in the preamble, 50 CFR part 665 is proposed to be amended as follows:

PART 665--FISHERIES IN THE WESTERN PACIFIC

1. The authority citation for part 665 continues to read as follows:

Authority: 16 U.S.C. 1801 *et seq*.

2. In § 665.12 the definitions for Crustaceans Management Area, Crustaceans Permit Area 3, Crustaceans Receiving Vessel and Precious Coral Permit area are revised to read as follows:

* * * * *

Crustaceans management area means the combined portions of the EEZ encompassed by Crustaceans Permit Areas 1, 2, 3, and 4.

Crustaceans Permit Area 3 (Permit Area 3) means the combined EEZ waters around Guam, American Samoa, and the EEZ seaward of a point 3 nm from the shoreline of the Commonwealth of the Northern Mariana Islands.

Crustaceans Permit Area 4 (Permit Area 4) means the combined EEZ waters around the Pacific Remote Island Areas.

Crustaceans receiving vessel means a vessel of the United States to which lobster taken in the Crustaceans management area are transferred from another vessel.

Precious coral permit area means the area encompassing the precious coral beds in the management area. Each bed is designated by a permit area code and assigned to one of the following four categories:

* * *

(4) Exploratory areas

* * *

(iv) Permit Area X-P-PI includes all coral beds, other than established beds, conditional beds, or refugia, in the EEZ seaward of the Pacific Remote Island Areas.

(v) Permit Area X-P-CNMI includes all coral beds, other than established beds, conditional beds, or refugia, in the EEZ seaward of the point 3 nm from the shoreline of the Commonwealth of the Northern Mariana Islands.

3. In § 665.12 add new definitions for PRIA bottomfish fishing permit, and PRIA crustacean fishing permit to read as follows:

* * * * *

PRIA bottomfish fishing permit means the permit required by § 665.61 to use a vessel to fish for bottomfish management unit species (MUS) in the EEZ, or to land bottomfish management unit species shoreward of the outer boundary of the EEZ, around the Pacific remote island areas.

PRIA crustacean fishing permit means the permit required by § 665.41 to use a vessel to fish for crustacean MUS in the EEZ, or to land crustacean MUS shoreward of the outer boundary of the EEZ, around the Pacific Remote Island Areas.

* * * * *

4. In § 665.14 paragraph (a) is revised to read as follows:

* * * * *

(a) Fishing record forms. The operator of any fishing vessel subject to the requirements of §§ 665.21, 665.41, 665.81 or 665.602 must maintain on board the vessel an accurate and complete record of catch, effort, and other data on report forms provided by the Regional Administrator. All information specified on the forms must be recorded on the forms within 24 hrs after the completion of each fishing day. Each form must be signed and dated by the fishing vessel operator. For the fisheries managed under §§ 665.21, 665.41, and 665.81, the original logbook form for each day of the fishing trip must be submitted to the Regional Administrator within 72 hrs of each landing of MUS unless the fishing was authorized under a PRIA troll and handline permit, a PRIA Crustaceans Fishing Permit or a PRIA Precious Corals Permit for Area X-P-PI, in which case the original logbook form for each day of fishing within the PRIA EEZ waters must be submitted to the Regional Administrator within 30 days of each landing of MUS.

* * * * *

5. In § 665.41, paragraph (a)(2) is revised to read as follows:

* * * * *

(2) The owner of any vessel used to fish for lobster in Permit Area 2, Permit Area 3 or Permit Area 4, must have a permit issued for the vessel.

* * * * *

6. In § 665.42 new paragraph (c) is added to read as follows:

* * * * *

(c) In Permit Area 3 and Permit Area 4, it is unlawful for any person to refuse to make available to an authorized officer and employee of NMFS designated by the Regional Administrator for inspection and copying any records that must be made available in accordance with § 665.14(f)(2).

7. In § 665.61, paragraphs (a) (f) and (g) are revised to read as follows:

* * * * *

(a) Applicability. (1) The owner of any vessel used to fish for bottomfish management unit species in the Northwestern Hawaiian Islands or Pacific remote island areas sub-areas must have a permit issued under this section and the permit must be registered for use with the vessel.

* * * * *

8. In § 665.62 paragraph (b) is revised to read as follows:

(b) Fish for, or retain on board a vessel, bottomfish management unit species in the Ho'omalu Zone, the Mau zone or the Pacific remote island sub-areas without the appropriate permit, registered for use with that vessel, issued under § 665.13.

* * * * *

(f) Falsify or fail to make and/or file all reports of bottomfish management unit species landings taken in the Pacific remote island areas sub-area, containing all data in the exact manner, as specified in § 665.14(a).

(g) Falsify or fail to make and/or file all reports of bottomfish management unit species landings, containing all data in the exact manner, provided that the person is required to do so by applicable state law or regulation, as specified in § 665.3.

* * * * *

9. In § 665.62 paragraph (d) is removed, and paragraph (e) is redesignated as paragraph (d).

10. Section § 665.69 is revised to read as follows:

(a) The bottomfish fishery management area is divided into eight sub-areas with the following designations and boundaries:

* * *

(6) Commonwealth of the Northern Mariana Islands Inshore Area means that portion of the EEZ shoreward of 3 nm of the shoreline of Commonwealth of the Northern Mariana Islands.

(7) Commonwealth of the Northern Mariana Islands Offshore Area means that portion of the EEZ seaward of 3 nm from the shoreline of Commonwealth of the Northern Mariana Islands.

(8) Pacific remote island areas mean that portion of the EEZ seaward of the Pacific remote islands area, with the exception of Midway Atoll.

* * *

(b) The inner boundary of each fishery management area is a line co-terminus with the seaward boundaries of the State of Hawaii, The Territory of American Samoa, the Territory of Guam and the Commonwealth of the Northern Mariana Islands.

(c) The outer boundary of each fishery management area is a line drawn in such a manner that each point on it is 200 nautical miles from the baseline from which the territorial sea is measured, or is co-terminus with adjacent international maritime boundaries. The boundary between the fishery management areas of Guam and the Commonwealth of the Northern Mariana Islands extends to those points which are equidistant between Guam and the island of Rota in the Commonwealth of the Northern Mariana Islands.

## 9.0 People and Agencies Consulted

American Deepwater Engineering (Precious Corals Harvester)

Commonwealth of the Northern Mariana Islands, Division of Fish and Wildlife

Joseph Dettling, Bottomfish Fisherman

Hawaii Department of Business Economic Development and Tourism

Hawaii Department of Land and Natural Resources, Division of Aquatic Resources

NOAA National Marine Fisheries Service, Pacific Island Fisheries Science Centre (PIFSC, former Southwest Fisheries Science Center, Honolulu Laboratory)

NOAA National Marine Fisheries Service, Pacific Islands Regional Office

NOAA Pacific Islands Regional Counsel

NOAA Southwest Regional Counsel

Dr Richard Grigg, University of Hawaii

U.S. Coast Guard, 14th District

U.S. Fish and Wildlife Service, Honolulu

## 10.0 References


Amesbury J, Hunter-Anderson R. 1989. Native fishing rights and limited entry in Guam. Honolulu: WPRFMC

Amesbury J, Hunter-Anderson R, Wells E. 1989. Native fishing rights and limited entry in the CNMI. Honolulu: WPRFMC.

Amerson A. Binion and Shelton P.C.. 1976. The Natural History of Johnston Atoll, Central Pacific Ocean. Atoll Research Bulletin No 192, Smithsonian Institution 479pp

Balazs G.H. 1978. A Hawksbill turtle in Kaneohe Bay, Oahu. Elepaio. Vol. 38(11): 128-129.

Beuttler T. August 8, 1995. Memorandum: EEZ around U.S. Territories and Islands in the western Pacific. Office of General Council, NMFS Southwest Regional Office.

Clarke R., Pooley S. 1988. An economic analysis of lobster fishing vessel performance in the Northwestern Hawaiian Islands. NOAA, NMFS Southwest Fish. Cen. Tech. Memo. NMFS-SWFC-106

Commonwealth of the Northern Marianas Islands - Division of Fish and Wildlife. 1997. Report on the Farallon de Medinilla Survey. Unpublished report for the Western Pacific Regional Fisheries Management Council, 94th Council Meeting, Honolulu, Hawaii.

Darling J.D. and Mori K. 1993. Recent Observations of humpback whales (*Megaptera novaeangliae*) in Japanese waters off Ogasawara and Okinawa. Canadian Journal of Zoology 71:325-333.

Eldredege L. 1983. Mariana's Active Arc: A Bibliography. UOG Technical Report # 82. 19 pp.

Eldredege L. 1991. Annotated Checklist of the Marine Mammals of Micronesia. Micronesica 24(2): 217-230.

Flint B. 2005. Personal Communication on sightings and stranding of marine mammals in US Fish and Wildlife Service's Pacific Remote Islands Refuges. United States Fish and Wildlife Service. Honolulu, HI.

Foreny K. and Kobayashi D. 2005. Updated Estimates of Mortality and Injury of Cetaceans in the Hawaii-based Longline Fishery, 1994-2004 (Draft document presented at the Pacific Scientific Review Group Meeting November 16-17, 2005). National Marine Fisheries Service.

Gilman E. 2000. Existing Marine Resources Management Framework and Recent Initiatives to Change the Governance of Marine Resources of the Northwestern Hawaiian Islands. National Audubon Society's Living Ocean Program.

Gourley J. 1997. The Commonwealth of the Northern Mariana Islands: An assessment of the coral reef resources under local and Federal jurisdiction. Final Report to the Western Pacific Regional Fisheries Management Council.

Green A. 1997. An Assessment of the Coral Reef Resources, and Their Patterns of Use in the U.S. Pacific Islands. Final Report to the Western Pacific Regional Fishery Management Council.

Grigg R. and Eldridge L. 1975. The Commercial Potential of the Precious Corals in Micronesia Part 1: The Mariana Islands. University of Guam Marine Laboratory Technical Report # 18. 16 pp.

Grigg R. 1993. Precious Coral Fisheries of Hawaii and the U.S. Pacific Islands. Marine Fisheries Review, Vol. 55 (2): 50-60.

Hamilton M, Curtis R. and Travis M. 1996. Cost-earnings study of the Hawaii-based domestic longline fleet. Honolulu: Pelagic Fisheries Research Program. JIMAR Contribution 98-300.

Hamilton M. and Huffman S. 1997. Cost-earnings study of Hawaii's small boat fishery, 1995-1996. Honolulu: Pelagic Fisheries Research Program. JIMAR Contribution 97-314.

Hamnett M. and Pintz W. 1996. The contribution of tuna fishing and transshipment to the economies of American Samoa, the Commonwealth of the Northern Mariana Islands and Guam. Honolulu: Pelagic Fisheries Research Program. JIMAR Contribution 96-303.

Hastie L. and Saunders W. 1992. On the Distribution and Fishery Potential of the Japanese Red Crab *C. granulatus* in the Palauan Archipelago, Western Caroline Islands. Marine Fisheries Review, Vol. 54 (1): 26-32.

Hoover J.P. 1998. Hawaii's Sea Creatures: *A Guide to Hawaii's Marine Invertebrates.* Mutual Publishing. Honolulu, Hawaii. 293.

Hunter C. 1995. Review of status of coral reefs around American flag Pacific islands and assessment of need, value, and feasibility of establishing a coral reef fishery management plan for the Western Pacific Region. Final Report to the Western Pacific Regional Fishery Management Council.

Irons D.K., Kosaki R.K. and J.D. Parrish. 1990. Johnston Atoll Resource Survey Final Report - Phase Six (21 July 89 - 20 July 90). Dept. of the Army, U.S. Army Engineer District, Honolulu, Fort Shafter, Hawaii.

Iverson R., Dye T., Paul L. 1990. Native Hawaiian fishing rights. Honolulu: WPRFMC.

Jefferson T., Leatherwood S., and Webber M. 1993. FAO Species Identification Guide: Marine Mammals of the World. United Nations Environment Programme, Food and Agriculture Ogranization. Rome, Italy.

Kolinski S.P., Parker D., Ilo I.L. and Ruak J.K. 1999. A Preliminary Assessment of the Sea Turtles and Sea Turtle Habitats of Saipan, Commonwealth of the Northern Mariana Islands. A Report Prepared for the National Marine Fisheries Service, Honolulu, HI.

Kolinski S. P., Ilo I.L. and Manglona J.M. 2004. Green Turtles and Their Marine Habitats at Tinian and Aguijan, with Projections on Resident Turtle Demographics in the Southern Arc of the Commonwealth of the Northern Mariana Islands. Micronesica 37(1): 97-118.

Marine Mammal Commission. 2000. 1999 Marine Mammal Commission Annual Report to Congress. Marine Mammal Commission, Bethesda, MD.

McCoy M. 1997. The traditional and ceremonial use of green turtle (*Chelonia mydas*) in the Northern Marianas. Honolulu: WPRFMC.

Meyer Resources, Inc. 1987. A report on resident fishing in the Hawaiian Islands. NOAA, NMFS Southwest Fish H-87-8C

Miller M. 1996. Social aspects of Pacific pelagic fisheries. Honolulu: Pelagic Fisheries Research Program, JIMAR Contribution 96-302.

Moffitt B. and Polovina J.. 1987. Distribution and Yield of the Deepwater Shrimp *Heterocarpus* Resource in the Marianas. Fishery Bulletin, Vol. 85, no. 2: 329-349.

Molina M. and Maragos J. 1998. List of coral species at Palmyra Atoll, November 1998. Unpublished manuscript U.S. Fish and Wildlife Service Pacific Islands Ecoregion, Honolulu.

Moss, D.R. 2000. Legal Opinion regard the Administration of Coral Reef Resources in the Northwest Hawaiian Islands. U.S. Department of Justice, Office of Legal Council, September 15, 2000.

Mundy B.C. 1997. “Preliminary checklist of fish species occurring in the Line Islands.” Unpublished report for the National Marine Fisheries Service, Honolulu Laboratory, Honolulu, Hawaii.

National Marine Fisheries Service and U.S. Fish and Wildlife Service. 1998a. Recovery Plan for U.S. Pacific Populations of the Green Turtle (*Chelonia mydas*). National Marine Fisheries Service, Silver Spring, MD.

National Marine Fisheries Service and U.S. Fish and Wildlife Service. 1998b. Recovery Plan for U.S. Pacific Populations of the Hawksbill Turtle (*Eretmochelys imbricata*). National Marine Fisheries Service, Silver Spring, MD.

National Marine Fisheries Service and U.S. Fish and Wildlife Service. 1998c. Recovery Plan for U.S. Pacific Populations of the Leatherback Turtle (*Dermochelys coriacea*). National Marine Fisheries Service, Silver Spring, MD.

National Marine Fisheries Service. 2004. Cruise Report: *Oscar Elton Sette*, Cruise 04-01 (OES-10). National Marine Fisheries Service, Pacific Islands Fishery Science Center, Honolulu, HI.

National Marine Fisheries Service. 2005a. Cruise Report: *Oscar Elton Sette*, Cruise 04-04 (OES-13). National Marine Fisheries Service, Pacific Islands Fishery Science Center, Honolulu, HI.

National Marine Fisheries Service. 2005b. Biological Opinion on the Hawaii-based Pelagic Deep-set Longline Fishery. National Marine Fisheries Service, Pacific Islands Regional Office.

National Marine Fisheries Service. 2005c. Stock Assessment Report - False Killer Whale (*Pseudorca crassidens*): Hawaiian Stock. National Marine Fisheries Service.

National Marine Fisheries Service. 2005d. Cruise Report: *Oscar Elton Sette*, Cruise 04-01 (OES-10). National Marine Fisheries Service, Pacific Islands Fishery Science Center, Honolulu, HI.

Nitta E. and Henderson J.R. 1993. A review of interactions between Hawaii's fisheries and protected species. Mar. Fish. Rev. 55 (2):83-92.

Nitta E.T. 1994. Summary Report: Bottomfish Observer Trips in the Northwestern Hawaiian Islands October 1990 to December 1993. National Marine Fisheries Service Pacific Area Office, Pacific Islands Protected Species Program.

Nitta E.T. 1999, Summary Report Bottomfish Observer Trips in the Hawaiian Islands October 1990 to December 1993, Draft, Pacific Islands Area Office, Pacific Islands Protected Species Office.

Ostazeski J. 1997. The Deepwater Shrimp Fishery of the Northern Mariana Islands. Southwest Fisheries Science Center Administrative Report H-97-10. 39 pp.

PIRO/Pacific Islands Regional Office, National Marine Fisheries Service. 2005. Hawaii Observer Program Bottomfish Annual Report (January 1, 2004 - December 31, 2004).

Polovina J. *et al*. 1985. Fisheries Resource Assessment of the Mariana Archipelago, 1982-1985. Marine Fisheries Review 47 (4): 19-25.

Pratt D., Bruner P. and Berrett D. 1987. A Field Guide to the Birds of Hawaii and the Tropical Pacific. Princeton University Press, New Jersey. 409 pp.

Ralston S., Gooding R. and G. Ludwig. 1986. An ecological survey and comparison of bottomfish resource assessments (submersibles versus handline fishing) at Johnston atoll. Fishery Bulletin, vol. 84, no.1: pp 141-153.

Radtke H. and Davis S. 1995. Analysis of Saipan's seafood markets. A report prepared for the CNMI Division of Fish and Wildlife, Solicitation number RFP94-0006.

Rhomann S.O., Hayes J.J., Newhall R.C., Monaco M.E. ad R.W. Grigg. 2005. The area of potential shallow-water tropical and subtropical coral ecosystem in the United States. Coral Reefs 24 pp 370-383.

Schofield T.D. Personal Communication, Conversation regarding beaked whale stranding at Palmyra Atoll in November 2005, 30 November 2005.

Severance C, Franco R. 1989. Justification and design of limited entry alternatives for the offshore fisheries of American Samao, and an examination of preferential fishing rights for native people of American Samoa within a limited entry context. Honolulu: WPRFMC

Smith R.P. 2000. Letter from Robert P. Smith, Manager, US Fish and Wildlife Service Pacific Islands Ecoregion, to Kitty Simonds, Executive Director, Western Pacific Regional Fishery Management Council, 8 June. 2pp

Sutterfield T. "FW: Whales" E-mail to Lewis Van Fossen. 16 December 2005.

Taitano Z.Y. 1991. 3 whales sighted off of Alupang Cove. Pacific Daily News, 13 February, p. 8.

Trianni M.1998a. The Large Vessel Bottomfish fishery of the Commonwealth of the Northern Mariana Islands, Department of Land and Natural Resources, Division of Fish and Wildlife Technical Report 98-03.

Trianni M. February, 1998b. Unpublished report on the status of CNMI Crustaceans Fisheries.

Trianni M. 1998c. Qualitative Assessment of World War II Ordinance Sites in Coral Reef Habitats at the Island of Rota: A Historical Record. CNMI Division of Fish and Wildlife Technical Assistance Report 98a. 18 pp.

Trianni MS. 2000. Life History and stock status of the redgill emperor (Lethrinidae: *Lethrinus rubrioperculatus*) in the CNMI. CNMI, Saipan, DFW Tech. Rept. 00-02.27pp. – CRM, DFW 2001.

Townsend C.H. 1935. The distribution of certain whales as shown by logbook records of American whaleships. Zoologica 19: 1-50.

U.S. Fish and Wildlife Service. 1997. 1996 national survey of fishing, hunting and wildlife associated recreation. Washington: Government Printing Office.

U.S. Fish and Wildlife Service. 2001a. Draft Environmental Assessment for the Proposed Palmyra Atoll National Wildlife Refuge, Line Islands, Central Pacific Ocean. U.S. Fish and Wildlife Service, Honolulu.

U.S. Fish and Wildlife Service. 2001b. Draft Conceptual Management Plan for the Proposed Palmyra Atoll National Wildlife Refuge, Line Islands, Central Pacific Ocean. U.S. Fish and Wildlife Service, Honolulu.

WPRFMC / Western Pacific Regional Fishery Management Council, 1997. Status of the CNMI Crustaceans Fishery. Unpublished document.

WPRFMC/Western Pacific Regional Fishery Management Council. 1999. Bottomfish and seamount groundfish fisheries of the Western Pacific Region, 1998 Annual Report. Honolulu, Hawaii.

WPRFMC/Western Pacific Regional Fishery Management Council. 2000a. Draft Fishery Management Plan for Coral Reef Ecosystems of the Western Pacific Region and Environmental Impact Statement, Regulatory Impact Review, Initial Regulatory Flexibility Analysis Regulations. Honolulu, Hawaii. December 2000.

WPRFMC / Western Pacific Regional Fishery Management Council. 2000b. Regulatory Amendment Establishing Permit and Reporting Requirements for the Pelagic Troll and Handline Fishery in the Remote Island Areas of the Western Pacific Region. Honolulu, Hawaii. September 2000.

WPRFMC / Western Pacific Regional Fishery Management Council. 2000c. Bottomfish and seamount groundfish fisheries of the Western Pacific Region, 1999 Annual Report. Honolulu, Hawaii.

WPRFMC / Western Pacific Regional Fishery Management Council. 2001. Measures to Reduce the Incidental Catch of Seabirds in the Hawaii Longline Fishery. Honolulu, Hawaii.

WPRFMC / Western Pacific Regional Fishery Management Council. 2001. Measures to Reduce the Incidental Catch of Seabirds in the Hawaii Longline Fishery. Honolulu, Hawaii.

WPRFMC / Western Pacific Regional Fishery Management Council. 2002. Sustainable Fisheries Act Amendment Document: Amendment 6 to the Bottomfish and Seamount Groundfish FMP, Amendment 8 to the Pelagic FMP, Amendment 10 to the Crustaceans FMP and Amendment 4 to the Precious Corals FMP, Honolulu, Hawaii.

Yamase D. 1982. State-Federal jurisdictional conflict over the international waters and submerged lands of the Northwestern Hawaiian Island. University of Hawaii Law Review 4(1): 139-180.

## Appendix 1 CNMI Non-commercial Fishing Regulations

Published in the Commonwealth Register

**SECTION 10**. USE OF EXPLOSIVES, CHEMICALS, POISONS, ELECTRIC SHOCKING DEVICES, SCUBA OR HOOKAH AND DISTURBANCE OF HABITAT *(Commonwealth Register, Volume 25, Number 02, February 28, 2003 p 20070)*

10.01 Prohibitions: The use of explosives, poisons, electric shocking devices, SCUBA or hookah is prohibited in the taking of any fish. a. No person shall use explosives, poisons, electronic shocking devices, SCUBA or hookah while fishing.

a. No person shall use explosives, poisons, electric shocking devices, SCUBA or hookah while fishing.

b. No person shall use drag nets/beach seines (Chenchulun and lagua) trap net (Tekken) for the taking of fish or other sea life.

c. No person shall possess, sell or purchase any fish, game, marine or other aquatic life taken by means prohibited in this Section.

d. Use of any of these nets or devices will result in the net or devices being confiscated and the owner will be subject to penalties (fines and/or imprisonment) as stated in 2 CMC Section 5109 (PL 2-51).

10.2 The use of any fishing gear in a manner that is substantially destructive to benthic substrate is prohibited. *(Commonwealth Register, Volume 22, Number 04, April 20, 2000 p 17190)*

10.3 The use of explosives, poisons, electronic shocking devices, SCUBA or hookah is allowed where used by a Division employee where such use is authorized by the Director or where used pursuant to a scientific collection permit which specifically allows for such use. *(Commonwealth Register, Volume 22, Number 04, April 20, 2000 p 17190)*

10.4 Disruption of Habitat: Disturbance of coral, dead or alive, is prohibited under any circumstances except under emergencies or by persons exempt under Section 30 below. *(Commonwealth Register, Volume 22, Number 04, April 20, 2000 p 17190)*

**SECTION 20**. USE OF CERTAIN NETS FOR FISHING *(Commonwealth Register, Volume 25, Number 02, February 28, 2003 pp 20070-20071)*

20.1 Nets Allowed: Casting nets (Talaya) are allowed. Scoop nets/landing nets (for landing fish) with a diameter of up to two feet or total square footage of up to four square feet are allowed.

20.2 License Required: A license shall be required for fishing with the use of a casting net (Talaya) net. One fee must be paid for each casting net to be used in fishing.

20.3 Registration of nets: Upon licensing of nets, the nets shall be marked by the Division with a registration tag, which will reflect the license number. The license holder shall notify the Division immediately if the registration tag becomes detached from the net.

20.4 Abandoned Nets: Abandonment of nets within the waters or coastal zone of the CNMI is prohibited. Nets that are found unattended in the water or within 150 feet of high water mark on any public beach will be considered abandoned. Permit holders of nets found abandoned may be subject to penalties including fines, suspension or revocation of net fishing permit(s), and confiscation and forfeiture of abandoned nets.

20.5 Exemptions: The Secretary, after consultation with the Director of the Division of Fish and Wildlife, may in certain cases make an exception to the ban on the use of certain types of nets for net fishing for ceremonial purposes when cultural practices warrant an exception, such as for a funeral or a fiesta. The Secretary must specify the extent and duration of the exception in writing and this information must accompany the recipient of the exception at the time the net fishing is undertaken.

**SECTION 30**. COLLECTION OF HARD CORALS *(Commonwealth Register, Volume 22, Number 04, April 20, 2000 p 17192)*

30.1 Prohibitions: The collection and/or removal from the waters of the CNMI of any and all species of hard Hermatypic reef building corals, soft corals or stony hydrozoans, is prohibited, except as specifically allowed by this Section. A license may be issued by the Director for the collection of Dead coral from the beach above the LLW(lower low water) mark for the purpose of manufacturing "Afuk" (calcium carbonate). A license may be issued by the Director for the collection of coral for scientific research purposes. All coral taken by the license may be inspected by the Division to insure that any coral was not taken in violation of these regulations.

**SECTION 50**. HARVEST OF TROCHUS NILOTICUS (ALILING TULOMPO, TROCHUS) *(Commonwealth Register, Volume 22, Number 04, April 20, 2000 p 17192)*

50.1 Harvesting: No trochus may be taken except during open season as declared by the Secretary, after consultation with the Director. Open season may be declared via public announcement and publication in the Commonwealth Register, and may be conditioned in any way, such as season dates and times, size and gear restrictions or seasonal take limits and license requirements. The taking of trochus measuring less than 3" across the base is prohibited.

50.2 Sanctuaries: Two closed areas are hereby established. These areas are designated to insure continuous high levels of productivity of trochus. Taking of trochus from these locations is prohibited, even during seasons declared by the Director. These closed areas are:

a. An area encompassing the barrier reef from the Garapan channel marker (light-house) south for one (1) mile. The inshore edge of the reef. The offshore boundary is the forty (40) foot depth contour.

b. The entire reef at Tank Beach, Kagman (Chacha), extending from the northern rocky headland to the southern rocky headland and bounded inshore by the mean high mark line and offshore by the forty (40) foot depth contour.

**SECTION 60**. HARVEST OF SEA CUCUMBERS *(Commonwealth Register, Volume 22, Number 04, April 20, 2000 pp 17192-17193)*

60.1 Harvesting: No sea cucumber may be taken except as permitted by the Director. Any permit issued by the Director is subject to special conditions as determined by the Director.

60.2 Sanctuaries: In addition to the sanctuaries specified in 40.2, the following areas will also serve as sea cucumber sanctuaries:

a. Laulau Bay from Puntan Hakmang to Puntan Dandan. Boundary is from the MHW (mean high water) mark line to offshore to the forty (40) foot depth contour.

b. Bird Island from Puntan I Maddock to Puntan Tangke. Boundary is from MHW (mean high water) mark line to offshore to the forty (40) foot depth contour.

**SECTION 70**. TAKING OF LOBSTER *(Commonwealth Register, Volume 22, Number 04, April 20, 2000 p 17193)*

70.1 Prohibitions: It shall be prohibited and deemed unlawful to take or to be in possession of any lobster:

a. Which measures less than three (3) inches (76.2 mm) in length measured in a straight line along the carapace from the ridge between the two (2) largest spines above the eyes, back to the rear edge of the carapace; or

b. Which is carrying eggs; or

c. Which has been stripped of her eggs; or

d. Harvested by spear or any method other than by hand.

70.2 Sanctuaries as specified in 40.2 apply here.

**SECTION 80**. HARVEST OF OTHER INVERTEBRATES *(Commonwealth Register, Volume 22, Number 04, April 20, 2000 p 17193)*

80.1 Harvesting: No other invertebrates may be taken except as permitted by the Director. Any permit issued by the Director is subject to special conditions as determined by the Director.

80.2 Sanctuaries: Sanctuaries specified in 40.2 apply to other invertebrates.

80.3 Prohibitions: The exportation of any species of the following groups of marine gastropods (snails), or any part or product thereof, taken from CNMI water is prohibited:

COMMON NAME SCIENTIFIC FAMILY NAME

Cone shell *Conidae*

Cowries *Cypraeidae*

Egg Cowries *Ovulidae*

Helmut shells Cassidae

Murexs *Muricidae*

Spiders and Conchs Strombidae

Tritons *Cymatidae*

Volutes *Volutiadae*

**SECTION 90**. FISH WEIRS *(Commonwealth Register, Volume 22, Number 04, April 20, 2000 pp 17193-17193)*

The use of fish weirs is prohibited.

**SECTION 100**. MORATORIA ON FISHING *(Commonwealth Register, Volume 22, Number 04, April 20, 2000 p 17194)*

The purpose of this section is to provide for the conservation of fishery resources. The Director is authorized to declare a moratorium on any and all fishing activity to conserve CNMI resources, through publication of such a moratorium in the Commonwealth Register. A moratorium on issuance of fishing licenses may be imposed when necessary to protect fish, Threatened or Endangered species or to otherwise carry out the functions of the Division as established by the CNMI Legislature.

**SECTION 110**. AQUARIUM FISH PROHIBITIONS *(Commonwealth Register, Volume 25, Number 02, February 28, 2003 p 20071)*

110.1 The sale or export of marine aquarium fish is prohibited.

110.2 An aquarium fish license is required by any person who captures aquarium fish for personal use or enjoyment.

110.3 No poisons may be used to collect aquarium fish, except for purposes of scientific research when a scientific research permit expressly allows such use.

110.4 All methods of collection of aquarium fish are prohibited except for the following:

a. Certain hand nets not previously registered by Conservation Office.

b. Barbless hook and line; and

c. Other collection methods specifically allowed in a written condition to a permit.

**SECTION 120**. MARINE RESERVES *(Commonwealth Register, Volume 23, Number 04, April 23, 2001 p 17853)*

120.1 The Director may acquire and designate aquatic habitats or easements as Marine Reserves in accordance with 2 CMC 5104(a)(5). Marine Reserves are created to protect important fish and aquatic species populations and their habitats. *(Commonwealth Register, Volume 22, Number 04, April 20, 2000 p 17194)*

120.2 The following Marine Reserves have been established on Rota and Saipan under the management of the Department: (Commonwealth Register, Volume 23, Number 04, April 23, 2001 p 17853)

a. Sasanhaya Fish Reserve: between and including Puna Point and the Coral Gardens

b. Managaha Conservation Area: consisting of the island of Managaha and its surrounding waters marked by boundaries at 15˚ 15’ 5.30”N, 145˚ 42’45.07”E and 15˚14’19.34”N, 145˚43’38.46”E and 15˚13’40.63”N, 145˚42’39.56”E and 15˚14’4.99”N, 145˚41’27.49”E. *(Commonwealth Register, Volume 23, Number 04, April 23, 2001 p 17853)*

120.3 Except as provided for in subsections 120.5 and 120.6 below, the following activities are prohibited within the boundaries of any Marine Reserve:

1. Killing or removing, or attempting to remove, any marine animal or plant, including but not limited to any fishes, coral (live or dead), lobster, shellfish, clams or octopus

2. Using any type of food or other attractant for the purposes of attracting fish(e.g. fish feeding, baiting, etc)

3. Anchoring of any vessel except in case of actual emergency, or for scientific purposes permitted by the Division.

4. Removing, defacing, damaging or destroying any artifact, natural object, buoy, sign or other structure,

5. Carrying on any commercial or industrial activity,

6. Disturbing or removing any substrate, sand, or other material, or

7. Dumping or depositing any rubbish, waste material or substance that would degrade or alter the quality of the environment.

120.4 Recreational and Cultural Use of Marine Reserves. *(Commonwealth Register, Volume 23, Number 04, April 23, 2001 p 17853)*

Recreational and cultural use of the marine reserves is allowed and encouraged to the extend that such activities are compatible with the marine conservation and management objectives of the conservation area. The Director may place limitations on recreational and cultural use of a marine reserve, or any portion thereof, if such use would have a detrimental impact on species, habitats, or environmental conditions within the marine reserve. Limitations shall be effective on the date on which notice of such limitation is published in the local newspaper and/or posted at the boundary of the marine reserve (in the case of Managaha Marine Reserve notice may be posted at the point of disembarkation the island). Any limitation on any activity for which a permit has been issued by the Division, or which is conducted under contract or other agreement with any CNMI agency, shall be implemented in accordance with the requirements of the permit or contract.

120.5 Exceptions:

The Director may, upon request from the Secretary or Resident Director from the island on which the marine reserve is located, issue limited, temporary fishing permits. In determining whether such permits shall be allowed, and the extend of fishing to be allowed, the Director shall

take into account any data or other information on the status of the fish stocks in the reserve. *(Commonwealth Register, Volume 22, Number 04, April 20, 2000 p 17195)*

120.6 Special Exemption on Conducting Commercial Activities in the Managaha Conservation Area: *(Commonwealth Register, Volume 23, Number 04, April 23, 2001 p 17853)*

The prohibition on conducting commercial activities in subsection 120.3(5) above shall not apply to those activities that are categorized as concessions under the Agreement for Special Recreational Concession between Marianas Public Lands Corporation and Tasi Tours Transportation, Inc. (as amended on 29 April 1992). Concessions operated under the Agreement must be conducted in accordance with these regulations. The Division may place limits on the type, location, and geographic extent of any concession activities in accordance with P.L. 12-12 if the Division determines that limitation of these activities is necessary to meet the management objectives for the Managaha Conservation Area.