

## **APPENDIX C: MEASURE TO INCLUDE THE CNMI AND U.S. PACIFIC ISLAND AREAS IN THE BOTTOMFISH AND SEAMOUNT GROUND FISH FMP; MEASURE TO DESIGNATE ADDITIONAL SPECIES AS MUS.**

(This appendix was prepared by the staff of the Western Pacific Regional Fishery Management Council, the NMFS Pacific Islands Fisheries Science Center, and the NMFS Pacific Islands Regional Office.)

### **SUMMARY**

These amendments establish new permitting and reporting requirements for the Commonwealth of the Northern Mariana Islands and the Pacific Remote Island Areas (PRIA). They includes the Exclusive Economic Zone (EEZ) waters of CNMI and the PRIA under the Western Pacific Regional Fishery Management Council's (Council) fishery management plans (FMP), and 48 additional bottomfish are designated as management unit species (MUS), allowing management measures to be applied to these species. Finally, essential fish habitat (EFH) and habitat areas of particular concern (HAPC) are designated for new Bottomfish Management Unit Species (BMUS) species.

The Council region, where its fishery management plans may be applied, covers the federal EEZ around the territories of Guam and American Samoa, the State of Hawaii, the CNMI and the PRIA. The specifics of these federal EEZ areas are discussed in these amendments. Since its formation, the Council has implemented five fishery management plans (FMPs) covering pelagic, crustacean, bottomfish and seamount groundfish, and precious corals fisheries. The most recent, the FMP for coral reef ecosystems, took effect on March 25<sup>th</sup> 2004. Due to circumstances discussed in these amendments, until now the CNMI has not been included in the Bottomfish, Crustacean or Precious Corals FMPs. Similarly, the PRIA have not been included in the Bottomfish or Crustacean FMPs. Following final ruling on both these amendments and the FMP for coral reef ecosystems, virtually all of the habitats and major species found in the Western Pacific would be managed under the Council's FMPs.

Recently, vessels have begun fishing for bottomfish and crustaceans in the CNMI and PRIA EEZ waters and this fishing effort may increase. In the CNMI, bottomfish landings from new, large vessels now account for about 60% of total commercial bottomfish landings. These vessels can exploit the fishing grounds of the relatively distant Northern Islands, which smaller, more traditional vessels generally cannot reach. Because data is collected voluntarily from these large 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 catch reporting occurred. Commercial quality precious corals have been landed in the EEZ waters around the CNMI and industry representatives have expressed a desire to explore new areas 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 (3-200 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.

Over the past few 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 regulatory amendment to the Pelagics FMP, implemented in 2002, requires federal reporting for vessels trolling for and landing Pelagic MUS in the PRIA. Data collection for other PRIA fisheries occurs at the landing port, which to date has been exclusively in 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 reprovisioning facility on Palmyra Atoll, may, if a market develops, allow for catches to be shipped out by air. There is no mechanism to gather needed 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 timely management actions. The U.S. Fish and Wildlife Service (USFWS) has been given the authority to manage a number of NWRs in the Western Pacific Region. The USFWS asserts the authority to manage marine resources and activities, including fishing activities in within Refuge boundaries pursuant to the National Wildlife Refuge System Administration Act (NWRSSA) 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 specific purposes for any use that is compatible with the refuge's primary purpose(s) and mission of the NWR (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, does not constitute promotion of fisheries in these areas and the accompanying regulations would not supersede any valid federal regulations that are more restrictive to fishing operations.

These amendments 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. Designation could occur in the future, if necessitated by further growth in these fisheries.

The 1998 Sustainable Fisheries Act (SFA) requires each managed fishery and species to describe and identify EFH and HAPC. These amendments would add 48 species to the list of BMUS and would also designate EFH and HAPC for these species.

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## ABBREVIATIONS AND ACRONYMS

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
Council	Western Pacific Regional Fishery Management Council
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
EIA	Environmental Impact Assessment
FDM	Farallon de Medinilla
FEIS	Final Environmental Impact Statement for the Pelagics Fisheries of the Western Pacific Region
FLPMA	Federal Land Policy and Management Act
fm	Fathom
FMP	Fishery Management Plan
FONSI	Findings of No Significant Impact
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
MHLC	The Multilateral High Level Conference on the Conservation of Highly Migratory Fish Stocks
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	Northwest Hawaiian Islands
NWR	National Wildlife Refuge
NWRSAA	National Wildlife Refuge System Administration Act
OY	Optimum Yield
PHCRT	Potentially Harvested Coral Reef Taxa
PIFSC	Pacific Islands Fisheries Science Centre
PRIA	Pacific Remote Island Area
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
USC	United States Code
VMS	Vessel Monitoring System
WCPO	Western Central Pacific Ocean
WPRFMC	Western Pacific Regional Fisheries Management Council

## **1. INTRODUCTION**

### **1.1 Existing Regulations**

The Fishery Management Plan for Bottomfish and Seamount Groundfish Fisheries in the Western Pacific Region became effective on August 27, 1986 (51 FR 27413). The FMP prohibits destructive fishing techniques, including explosives, poisons, trawl nets and bottom-set gillnets, establishes a moratorium on the commercial harvest of seamount groundfish stocks at the Hancock Seamounts and implements a permit system for fishing for bottomfish in the Exclusive Economic Zone (EEZ) around the Northwestern Hawaiian Islands (NWHI). The plan also establishes a management framework that facilitates future adjustments, such as catch limits, size limits, area or seasonal closures, fishing effort limitation, fishing gear restrictions, access limitation, and permit and/or catch reporting requirements.

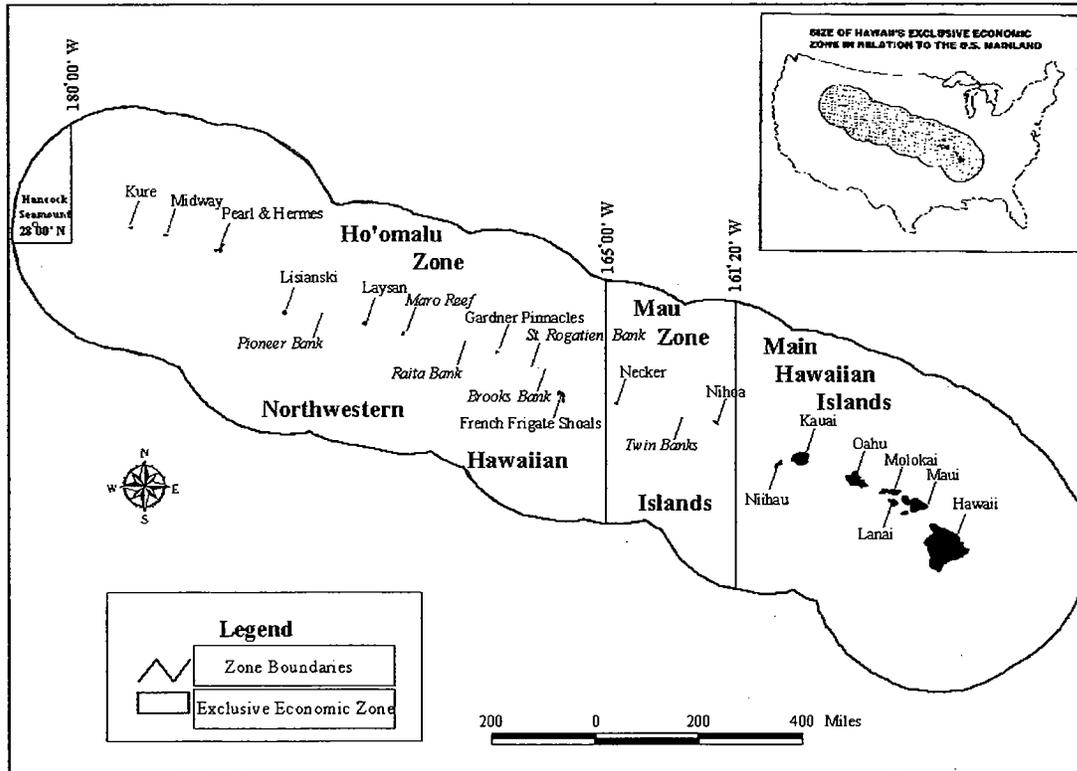
Amendment 1, implemented on November 11, 1987 (52 FR 38102), extends limited access permits as a management option to bottomfish fisheries in the EEZ surrounding American Samoa and Guam.

Amendment 2, implemented on September 6, 1988 (53 FR 29907), is intended to diminish the risk of biological overfishing and improve the economic health and stability of the bottomfish fishery in the NWHI. The amendment divides Federal waters in the NWHI into two management areas: the Ho'omalulu Zone and the Mau Zone (Figure C-1 shows the location and boundaries of these two zones). It also implemented a limited access system for the Ho'omalulu Zone. Although it also established a Mau Zone permit, the number of permit holders was not restricted except that Ho'omalulu Zone permit holders could not also hold a Mau Zone permit. The Mau Zone was intended to serve as an area where fishermen could gain experience fishing in the NWHI, thereby enhancing their eligibility for subsequent entry into the Ho'omalulu Zone.

Amendment 3, implemented on January 16, 1991 (56 FR 2503), defines recruitment overfishing as a condition in which the ratio of the spawning stock biomass per recruit at the current level of fishing to the spawning stock biomass per recruit that would occur in the absence of fishing is equal to or less than 20 percent. Amendment 3 also delineates the process by which overfishing is monitored and evaluated.

Amendment 4, implemented on May 26, 1991 (56 FR 24351), requires vessel owners or operators to notify the NMFS at least 72 hours before leaving port if they intend to fish in a 50-mile study zone around the NWHI. This notification allows Federal observers to be placed on board bottomfish vessels to record interactions with protected species if this action is deemed necessary.

**Figure C-1. Map of Hawaiian Archipelago and NWHI Management Areas**



Amendment 5, implemented on May 28, 1999 (64 FR 22810), establishes a limited access program in the NWHI Mau Zone fishery. A qualifying point system for the initial allocation of permits balances historic participation with current or recent fishing activity. Permit issuance requires that permit holders be an individual, partnership or corporation. These permit holders must retain at least 50 percent ownership in the permitted vessel or its replacement. A permit holder whose vessel is unseaworthy or who does not currently own a vessel may lease or charter a vessel for up to 12 months. Permits for the Mau Zone fishery are issued on an annual calendar basis. Participants must meet annual trip and landing criteria in order to qualify for a permit the following year. Permit recipients cannot transfer, lease, charter or sell their permit. The Amendment directs the Council to conduct an annual review of the Mau Zone limited access system in order to determine whether adequate attrition has taken place. The Council must also conduct a comprehensive review of the effectiveness of the limited access system five years after implementation. In addition, Amendment 5 reserves one-fifth of the target number of permits for a Western Pacific Community Development Program (CDP). This program was implemented on May 16, 2002 (67 FR 18512) and defines an eligible community as “a population of non-transient people descended from the aboriginal people indigenous to the area who share a common history based on social, cultural and economic interactions and a functional relationship sustained by participation in fishing and fishing related activities”. Finally, Amendment 5 includes a requirement that the Council develop criteria to allow new entry into the Mau Zone

when the number of permitted vessels falls below 10 (the target number).

Amendment 6 addressed new requirements under the 1996 Sustainable Fisheries Act (SFA). Portions of the amendment that were immediately approved include designations of essential fish habitat and descriptions of some fishing communities. Those provisions became effective on February 3, 1999 (64 FR 19067). Remaining portions that were approved on August 5, 2003 (68 FR 46112) were provisions regarding Hawaii fishing communities, overfishing definitions, and bycatch.

In June 1998 the State of Hawaii implemented several management measures for bottomfish in the state waters of the Main Hawaiian Islands (Hawaii Administrative Rule, Chapter 13-94). Because bottomfish are managed under the FMP on an archipelagic-wide basis and because there are bottomfishing grounds in federal waters that are adjacent to state waters, these measures directly impact the stocks managed under the Bottomfish FMP. The new rules apply to seven species of bottomfish and include gear restrictions, bag limits for non-commercial fishermen, closed areas, and a requirement that all bottomfishing vessels be registered with the state.

Of relevance to the management of the NWHI bottomfish fishery is the Northwestern Hawaiian Islands Coral Reef Ecosystem Reserve (NWHI Reserve), established December 4, 2000 through Executive Order (EO) 13178 (65 FR 76903), as modified by EO 13196 on January 18, 2001 (66 FR 7395). The NWHI Reserve is managed by the Department of Commerce under the National Marine Sanctuaries Act. The EO calls for the Secretary of Commerce to initiate the process to designate the NWHI Reserve as a National Marine Sanctuary. The public scoping associated with that process began in April, 2002.

A number of FMP amendments and framework adjustments are in various stages of preparation and approval. Although they have not been approved by the National Marine Fisheries Service (NMFS) or implemented through regulations, the following descriptions give an indication of the actions being proposed and considered.

Amendment 8 to the FMP would include the federal waters around the Commonwealth of the Northern Mariana Islands and the Pacific Remote Island Areas under the FMP and would designate 49 additional bottomfish species as BMUS.

A regulatory adjustment to the FMP would suspend the minimum landing requirements for annual permit renewal in the NWHI Hoomalu and Mau Zone limited access programs.

Amendment 9 to the FMP would prohibit vessels greater than 50' in length overall from targeting Bottomfish Management Unit Species within 50 miles of Guam, and would require these vessels to obtain federal permits and to submit federal logbooks.

## **1.2 Responsible Agencies**

The Council was established by the Magnuson-Stevens Fishery Conservation and Management

Act to develop FMPs for fisheries operating in the US EEZ around American Samoa, Guam, Hawaii, the Commonwealth of the Northern Mariana Islands and the US possessions in the Pacific.<sup>1</sup> Once an FMP is approved by the Secretary of Commerce, it is implemented by federal regulations which are enforced by the National Marine Fisheries Service and the US Coast Guard, in cooperation with state, territorial and commonwealth agencies. For further information, contact:

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### **1.3 Public Review Process and Schedule**

The Council first addressed this issue at the 93<sup>rd</sup> Council Meeting in August 1997, requesting staff to begin prepare a background document containing a range of alternatives to include the PRIA and CNMI under the Crustacean and Bottomfish FMPs.

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 Crustacean FMPs. Comments were also requested for the addition of new management unit species for the Bottomfish and Crustacean 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.

### **1.4 List of Preparers**

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<sup>1</sup> 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.

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## **2. PURPOSE AND NEED FOR ACTION**

To date, waters of the EEZ around the CNMI have not been included in the Bottomfish and Seamount Groundfish, Crustaceans or Precious Corals FMP developed and implemented by the Council. The PRIA are distant and mostly uninhabited US 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 EEZ waters around the PRIA have not been included in the Bottomfish FMP or the Crustacean 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 included in the management plans mentioned above because historically these fisheries had not been prosecuted there. Since the CNMI and PRIA are not included in all fishery FMPs, federal fishery management, including data collection, is limited in these areas. A range of factors, discussed below, have resulted in the development of small fisheries in these areas that may require federal management at some future date. These amendments consider measures for two areas. The management area for the PRIA begins at the shoreline and extends offshore 200 nm. EEZ waters around CNMI include all waters from the shoreline to 200 nm, which comprises the management area of these amendments. The CNMI offshore area means those waters between the 3-200 miles from shore in which FMP regulations would apply, while the inshore area means those waters 0-3 miles from shore where management would be deferred to local authorities. These amendments to the relevant FMPs are essentially "housekeeping measures" that lay the groundwork for federal fishery management in CNMI and PRIA federal waters. 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. 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.

A third issue is the requirement under the 1998 Sustainable Fisheries Act (SFA) to describe and identify essential fish habitat (EFH) and habitat areas of particular concern (HAPC) for each managed fishery and species. These amendments would add 48 species to the list of BMUS and therefore require EFH and HAPC for these species need to be designated.

### **3. MANAGEMENT OBJECTIVES**

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

1. To improve the database for future decisions through data reporting requirements and cooperative Federal/State/Territory data collection programs.
2. To manage fisheries for management unit species in the Western Pacific Region to achieve optimum yield (OY).
3. To improve the statistical base for conducting better stock assessments and fishery evaluations thus supporting fishery management and resource conservation in the EEZ and throughout the range of the management unit species.

In addition, the Magnuson-Stevens Fishery Conservation and Management Act requires that any fishery management plan which 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.

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. MANAGEMENT ALTERNATIVES

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

###### Alternatives:

1. No Action-maintain current management status and regulations.
2. Include the CNMI EEZ as a management subarea in the Bottomfish and Seamount Groundfish FMP, with FMP regulations applied to the off-shore area (3-200 nm), no FMP permitting or reporting requirements (**preferred alternative**).
3. Include the CNMI EEZ as a management subarea in the Bottomfish and Seamount Groundfish FMP, with FMP regulations applied to the off-shore area (3-200 nm), implement new federal permitting and reporting requirements for large commercial vessels, targeting BMUS.

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

###### Alternatives:

1. No Action-maintain current management status and regulations.
2. Include the PRIA EEZ as a management subarea in the Bottomfish and Seamount Groundfish FMP, no FMP permitting or reporting requirements.
3. Include the PRIA EEZ as a management subarea in the Bottomfish and Seamount Groundfish FMP, implement new federal permitting and reporting requirements for all vessels targeting BMUS. (**preferred alternative**).

##### 4.3 Addition of Management Unit Species to the Bottomfish and Seamount Groundfish FMP

###### Alternatives:

1. No Action-maintain current list of Bottomfish MUS as in Table C-1.
2. Add the species listed in Table C-2 as management unit species under the Bottomfish and Seamount Groundfish FMP (**preferred alternative**)

##### 4.4 Management Measure Proposed for Essential Fish Habitat and Habitat Areas of Particular Concern Designations for new BMUS

###### Alternatives:

1. No Action-maintain current management status and regulations
2. Designate individual EFH and HAPC for each species.
3. Designate EFH and HAPC by family groups or at higher taxonomic level.
4. Designate EFH and HAPC by habitat composites.
5. Designate EFH and HAPC by fishing method.
6. Designate EFH and HAPC by depth range of management unit species- (**preferred alternative**).



Table C-1. Current Bottomfish Management Unit Species List

(Absence of an indigenous name implies no local name established or area is not within the species' geographic range.)

Scientific	English Common	American Samoa	Guam/CNMI	Hawaii
<b>Bottomfish:</b>				
<i>Aphareus rutilans</i>	red snapper/silvermouth	palu-gutusiliva	maraap tatoong	lehi
<i>Aprion virescens</i>	gray snapper/jobfish	asoama	tosan	uku
<i>Caranx ignobilis</i>	giant trevally/jack	sapoanae	tarakito	white ulua/pau'u
<i>C. lugubris</i>	black trevally/jack	tafaui	frankiton attilong	black ulua
<i>Epinephelus fasciatus</i>	blacktip grouper	fausi	gadao matai	
<i>E. quernus</i>	sea bass			hapu'upuu
<i>Etelis carbunculus</i>	red snapper	palu-malau	guihan boninas	ehu
<i>E. coruscans</i>	red snapper	palu-loa	onaga	onaga
<i>Lethrinus amboinensis</i>	ambon emperor	filoa-gutumumu	mafuti/lililok	
<i>L. rubrioperculatus</i>	redgill emperor	filoa-pa'o'omumu	mafuti tatdong	
<i>Lutjanus kasmira</i>	blue line snapper	savane	sas/funai	ta'ape
<i>Pristipomoides auricilla</i>	yellowtail snapper	palu-i'usama	guihan boninas	yellowtail kalekale
<i>P. filamentosus</i>	pink snapper	palu-'ena'ena	guihan boninas	opakapaka
<i>P. flavipinnis</i>	yelloweye snapper	palu-sina	guihan boninas	yelloweye opakapaka
<i>P. seiboldi</i>	pink snapper		guihan boninas	kalekale
<i>P. zonatus</i>	snapper	palu-sega	guihan boninas/gindai	gindai
<i>Pseudocaranx dentex</i>	thicklip trevally		terakito	butaguchi/pig ulua
<i>Seriola dumerili</i>	amberjack		guihan tatdong	kahala
<i>Variola louti</i>	lunartail grouper	papa	bueli	
<b>Seamount Groundfish:</b>				
<i>Beryx splendens</i>	alfonsin			kinmedai (Japanese)
<i>Hyperoglyphe japonica</i>	ratfish/butterfish			medai (Jap.)
<i>Pseudopentaceros richardsoni</i>	armorhead			kusakari tsubodai (Jap.)



**Table C-2. Bottomfish Species proposed for addition to the Bottomfish Management Unit Species List**

Carangidae

<i>Carangoides orthogrammus</i>	yellow-spotted trevally
<i>Carangoides caeruleopinnatus</i>	coastal trevally
<i>Caranx melampygus</i>	bluefin trevally
<i>Caranx papuensis</i>	brassy trevally
<i>Caranx sexfasciatus</i>	bigeye trevally
<i>Seriola rivoliana</i>	almaco jack

Serranidae

<i>Cephalopholis argus</i>	peacock grouper
<i>Cephalopholis igarashiensis</i>	yellow-banded grouper
<i>Cephalopholis sonnerati</i>	tomato grouper
<i>Cephalopholis urodeta</i>	flagtail grouper
<i>Epinephelus hexagonatus</i>	hexagon grouper
<i>Epinephelus howlandi</i>	blacksaddle grouper
<i>Epinephelus lanceolatus</i>	giant grouper
<i>Epinephelus macrospilos</i>	snubnose grouper
<i>Epinephelus maculatus</i>	highfin grouper
<i>Epinephelus merra</i>	honeycomb grouper
<i>Epinephelus microdon</i>	smalltooth grouper
<i>Epinephelus morrhua</i>	striped grouper
<i>Epinephelus octofasciatus</i>	eightbar grouper
<i>Epinephelus polyphekadion</i>	camouflaged grouper
<i>Epinephelus timorensis</i>	yellowspotted grouper
<i>Plectropomus laevis</i>	giant coral grouper
<i>Saloptia powelli</i>	pink grouper
<i>Variola albimarginata</i>	white-margined lyretail grouper

Lethrinidae

<i>Gnathodentex aurolineatus</i>	yellowspot emperor, striped large eye bream
<i>Gymnocranius microdon</i>	blue-spotted large-eye bream
<i>Gymnocranius grandoculis</i> ( <i>G. rivulatus</i> in American Samoa)	blue-line, large-eye bream
<i>Lethrinus atkinsoni</i>	Pacific yellowtail emperor
<i>Lethrinus erythacanthus</i>	orange-fin emperor
<i>Lethrinus harak</i>	thumbprint emperor, blackspot emperor
<i>Lethrinus kallopterus</i>	orange-fin emperor
<i>Lethrinus obsoletus</i>	orange-striped emperor
<i>Lethrinus olivaceus</i>	longface emperor
<i>Lethrinus xanthochilus</i>	yellowlip emperor
<i>Monotaxis grandoculis</i>	humphose bigeye bream, bigeye emperor

## Lutjanidae

<i>Aphareus furca</i>	blue smalltooth jobfish
<i>Lutjanus bohar</i>	twinspot snapper, red snapper
<i>Lutjanus fulvus</i>	flametail snapper
<i>Lutjanus gibbus</i>	humpback snapper
<i>Lutjanus monostigmus</i>	onespot snapper
<i>Lutjanus rufolineatus</i>	rufous snapper
<i>Lutjanus sanguineus</i>	blood snapper
<i>Paracaesio kusakarii</i>	kusakar snapper
<i>Paracaesio stonei</i>	stone's snapper
<i>Paracaesio xanthurus</i>	deepwater bream
<i>Pristipomoides argyrogrammicus</i>	blue gindai
<i>Pristipomoides multidens</i>	multidens snapper

## Scorpaenidae

<i>Pontinus macrocephala</i>	hogo
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### **5. 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. Including additional bottomfish that are currently caught in American Samoa, Guam and CNMI as Bottomfish MUS would also allow future conservation measures to apply to these currently harvested species. Improved data collection in the PRIA would help analyze trends and potentially 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. They would also make it possible to implement comprehensive mandatory data collection if voluntary systems currently in place in the CNMI become inadequate. Designating additional Bottomfish MUS would ensure that fisheries scientists analyze the available data on these species in order to meet MSFCMA conservation requirements.

*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.*

The regulations associated with these amendments for bottomfish 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 with the inclusion of the CNMI, the PRIA and the new Bottomfish MUS 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 were 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 (bottomfish fishery in the PRIA), these amendments avoids duplication to the extent possible.

*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 management measures are needed. As most of the artisanal and subsistence fishermen fish the inshore waters of CNMI, these amendments separates the inshore zone from the offshore zone. Management of the inshore area would remain under local DFW control. While permits would be required for the crustacean fishery in the offshore zone, 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 in the PRIA on bycatch and retention of bottomfish MUS. These amendments would also allow for quick 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 in the PRIA and CNMI and information on the operations of fishing vessels would assist the US Coast Guard in prioritizing their efforts.

## **6. RELATIONSHIP TO OTHER APPLICABLE LAWS**

### **6.1 National Environmental Policy Act (NEPA)**

#### **6.1.1 Purpose and need for action**

The purpose and need for action are described in Section 2 of this appendix.

#### **6.1.2 Alternatives Considered**

The management alternatives considered by the Council are described in Section 5 of this appendix.

### **6.1.3 Affected Environment Given Cumulative Impacts to Date**

The following provides a more detailed description of the affected environment around CNMI and the PRIA, respectively. See Chapter 3 of the FEIS for a broader description of the region's affected environment.

#### **6.1.3.1 Physical Environment**

##### CNMI

The Commonwealth of the Northern Mariana Islands (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 are called the 'Northern Islands', a term which would be used in this report. Several of these Northern Islands have been designated as wildlife conservation areas. The seamounts have been named Bank A, 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.

The most complete examination of CNMI's bathymetry was compiled by Hunter (1995) which defines the coral reef habitat as all areas to a depth of 100 meters. As the approximate average fishing depth for the research, charter and commercial bottomfishing vessels is 150 meters, bathymetric maps of the CNMI were examined to estimate the additional fishable area from the 100 meter to the 250 meter isobaths. This additional area increases banks size very slightly as most shelves drop off quickly. Thus as a proxy, the Hunter analysis may be used to illustrate viable bottomfish grounds. The crustacean fishery occurs entirely within the 100 meter isobath. Thus, the Hunter estimate of habitat is appropriate for these discussions. A total of 579 square km of banks and reefs has been estimated in the EEZ surrounding the CNMI. Of this area, 534 square km are outside 3 nm. Of the 534 square km in the proposed management area, 403 square km (75%) surround or are very near to FDM. 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 square km (10%) of viable habitat. Forty-two square km (8%) are in the EEZ near the inhabited Southern Islands and are already heavily fished. Maps of the islands and offshore banks are found in Appendix II.

##### 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 20<sup>th</sup> century (Midway Atoll is not

considered in these amendments as it is already included in all Council FMPs). 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 total areas thought to be suitable for bottomfish and/or crustacean fishing is shown in the table below. Detailed maps of islands are located in Appendix II.

### **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.

One hundred and thirty-eight species of fish are known to occur in the waters surrounding Baker Island. The fish species assemblages found at Baker and Howland Islands are similar. Coral diversity is moderate while total coverage is high. The total area of coral reef found within the Refuge boundary is approximately 10 km<sup>2</sup>. In April 2000 and January 2002, a joint NMFS-USFWS cruise conducted a rapid ecological assessment of Baker Island. The team ran towed diver fish and benthic surveys. Data is to date unpublished.

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.

Baker Island has a no take MPA from 0 to 50 fm.

### **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 US Fish and Wildlife Service (USFWS). The Refuge boundary, established by the USFWS, extends seaward from the shoreline to 3 nm. The USFWS prohibits fishing within the Refuge boundaries.

A survey conducted in 1986 recorded 144 species of fish at Howland including 91 species of reef fish from 24 families. The giant clam (*T. Maxima*) occurs in abundance at Howland. As stated, this species is protected under the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES). Within the Refuge boundary there is approximately 5 km<sup>2</sup> of coral reef habitat. Adult green sea turtles have been observed in the waters surrounding Howland. In April 2000 and January 2002, a joint NMFS-USFWS cruise conducted a rapid ecological assessment of Howland Island. The team ran towed diver fish and benthic surveys. Data is to date

unpublished.

Howland Island has a no take MPA from 0 to 50 fm.

**Table C-3: Area of Shallow Water Habitat (0-100 fathoms) for Pacific Remote Island Areas**

Island	Total Habitat (km <sup>2</sup> )	Inside 3 nm	Outside 3 nm
Baker (*NWR)	10	10	0
Howland (*NWR)	5	5	0
Jarvis (*NWR)	8	8	0
Johnston Atoll (**NDA and NWR)	205	130	75
***Kingman Reef (NWR)	49	39	10
***Palmyra Atoll (NWR)	400	396	4
Wake	32	32	0

\* National Wildlife Refuge

(Data from Hunter, 1995)

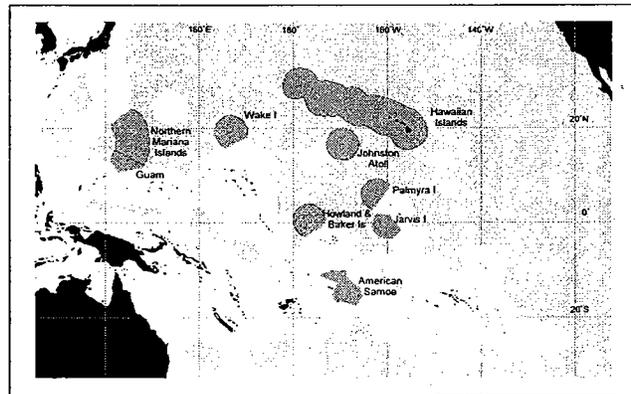
\*\* National Defensive Sea Area

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

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

**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.



The marine environment at Jarvis is largely unsurveyed and quantitative data on fish populations at Jarvis are currently unavailable. 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<sup>2</sup>. In April 2000 and March 2002, a joint NMFS-USFWS cruise conducted a rapid ecological assessment of Jarvis Island. The team ran towed diver fish and benthic surveys. Data is to date unpublished.

Jarvis has a no take MPA from 0 to 50 fm.

### **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<sup>2</sup> 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 all the 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.

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). There are two species of fish known to be endemic to Johnston, a wrasse and an angelfish.

Johnston Atoll has a low-use MPA from 0 to 50 fm.

### **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<sup>2</sup> of coral reef surrounding Palmyra. Kingman Reef consists of a reef and shoal approximately 49 km<sup>2</sup> 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 a 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 has designated the waters to 50 fathoms around Palmyra as a no-take Marine Protected Area (MPA) in its Coral Reef Ecosystem FMP.

The coral reef resources around Palmyra have been poorly studied. A preliminary study includes 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. They ran towed diver fish and benthic surveys. Data is to date unpublished.

The Nature Conservancy purchased Palmyra Atoll in late 2000, and manages the atoll as a nature preserve. USFWS asserts a 12 nm boundary for the seaward delineation of the Refuge. However, as 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, the Council opposes the proposed 12 nm Refuge boundary. During the development of the deal, the Council has met on multiple occasions with representatives of the USFWS to discuss the proposed seaward boundary of the wildlife refuge.

### **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 comprised of three atolls, Wake, Peale, and Wilkes. Wake Island is administered by the US Air Force's 15<sup>th</sup> 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 has 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<sup>2</sup>. 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).

Wake Island has a low-use MPA from 0 to 50 fm.

### **6.1.3.2 Fisheries**

#### **CNMI**

When the Fishery Conservation and Management Act was passed by the US in 1976, the Commonwealth of the Northern Mariana Islands was not included. A 1983 amendment to the MSFCMA included the CNMI under the jurisdiction outlined by the Act.

Of recent concern has been the local constitutional process of passing fishing regulations. Both non-commercial and commercial regulations were drafted by the Division of Fish and Wildlife in 1993. While the non-commercial regulations 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 Fishery Management Plans were written to include the CNMI and to date only the Pelagics FMP has been amended to manage those pelagic species caught in the CNMI EEZ. This creates the undesirable situation of neither the local government nor the federal government having clear authority over the bottomfish, crustacean and precious coral resources around the CNMI.

In spite of this situation, the DFW does manage the fisheries of the CNMI EEZ to some extent. 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. Marine protected areas (MPAs) have been established and large commercial operations are informally limited through the controlled issuance of business licenses.

### **CNMI Bottomfish Fishery**

The CNMI bottomfish fishery can be categorized into two segments: deep (>500 ft) and shallow (<500 feet) water fishing. The deep water fishery is primarily commercial, targeting snappers, the *Eteline* and *Pristipomoides* complexes, and the eight-banded grouper. The shallow water fishery, which targets the red-gilled emperor, is mostly commercial but also includes recreational and subsistence fishermen. Some trips last for more than a day, but the majority of bottomfishing trips by small vessels are one day. For this reason, calculations of catch per unit effort (CPUE) utilize a one day trip as one unit of effort. Fishing trips are generally restricted to daylight hours, with vessels returning before or soon after sunset.

The CNMI bottomfish fishery occurs primarily around the islands and banks from Rota Island to Zealandia Bank north of Sariguan. Historically, the CNMI has had a relatively small fishing fleet consisting primarily of small-scale local boats engaged in commercial, subsistence and recreational fishing. DFW has reported that 150 skiffs are used for subsistence fishing and 8 vessels ranging from 29 to 70 feet have been used commercially. However, the 2000 DFW "trip tickets" recorded a total of 64 vessels, both large and small, fishing commercially. The skiffs are generally less than 24 feet in length which restricts them to fishing one day trips during the daylight hours within a 30 mile radius of Saipan (WPRFMC, 1998 Bottomfish Annual Report). Due to their distance from port, CNMI small boat fishermen are reluctant to fish western seamounts. Hand lines, home fabricated hand reels and electric reels are commonly used for small-scale fishing operations.

Prior to 1994, large vessel ventures were short-lived. These vessels have landed as much as 70% of the total reported commercial bottomfish landings (M. Trianni, pers. comm.) The number of large-vessel commercial bottom-fishing ventures active in the northern islands appeared to increase to eight during 2000 (Table C-4) but only four were active for more than a few trips. Of these four, two primarily sold their catches off the island of Saipan (mostly to the large hotels in Tinian). Commercial trips made by these large vessels are no longer sampled on a monthly basis. These vessels catch the majority of the deep-water bottomfishes, although in 2002 one high liner

for onaga used small vessels to fish locally off Saipan. In 2002, the most consistent high liner of previous years did not fish, and a second high liner only fished the first 5 months of 2002.

The larger commercial vessels are able to make multi-day trips to the Northern Islands, focusing their effort from Esmeralda Bank to Zealandia. These vessels are required to submit a "float plan" to the DFW prior to leaving port. Float plans are only required when a vessel fishes north of Saipan and help the DFW track the effort from the large vessel fishery. Electric reels and hydraulics are the common gear used for these larger operations. No known commercial vessels have ice-making or freezer capabilities. Two ventures, comprised of three vessels, a 65-foot vessel and two 50-foot vessels, fished the Northern Islands deep-water complex in 1997, landing large volumes of onaga (*Etelis coruscans*) and eight-banded grouper (*Epinephelus octofasciatus*).

In 1998, both ventures continued to fish in the Northern Islands. One continued to target onaga and eight-banded grouper, while the other shifted to the red-gilled emperor (*Lethrinus 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 bottom fishing vessels left the fishery. Four vessels have entered the fishery since late 2000, with two vessels occasionally targeting sharks (M. Trianni, pers. comm.). The 1999 estimate of total sales of bottomfish in CNMI was \$161,000. Table C-5 provides a summary of annual statistics for CNMI bottomfishes from all vessels, including small boat artisanal fishermen. The trend of increased landings over time is due to the development of the Northern Island fishery. The number of boats fishing in 2001 increased from 66 to 75 in 2002, when there were also record total landings of 71,660 lbs.

Landings of bottomfish decreased (34.3% fewer pounds in 2002 than in 2001) from the highest total landings last year, to slightly higher than the 20-yr mean. Bottomfish landings in the CNMI have been higher than the 20-yr mean for the last 7 years. The number of trips during which bottomfishes were caught also decreased to near the 20-yr mean, and the average bottomfish catch per trip increased to just above the 20-yr mean. This fishery continues to show a high turnover with changes in the high liners participating in the fishery and an increased number of local fishermen focusing on reef fishes in preference to bottomfishes. Fishermen are moving towards an increasing number of multi-purpose trips that focus primarily on reef fishes and catch pelagic species while in transit. In doing so, the shallow-water bottomfish complex continues to be exploited, but as part of the exploitation of reefs near the populated islands. Redgill emperor (mafute') is the most frequently harvested and easily identified species in this complex, although a variety of snappers and groupers are also harvested.

Domestic US, joint-venture, and foreign vessels continue to inquire about full-time bottom 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.

Revenues and prices for bottomfishes were lower in 2002 than in 2001, with the inflation-adjusted revenue greater than the 20-year mean, but the average price per pound (adjusted) continued to be

lower than the 20-yr mean. Only 5 years in the last 20 have had lower values. Prices decreased for all groups (from 10¢ to 79¢ /lb) from last year, with the exception of ehu (increased 4¢ /lb), gindai (increased 5¢ /lb), sickle pomfret (increased 18¢ /lb), and “assorted bottomfish” (increased 2¢ /lb). Onaga still command the best prices, but the range is narrowing with opakapaka, blueline snapper, gindai, ehu, kalikali, emperor (mafute'), and silvermouth within 50¢ per pound.

Over the last 6 years, 64% of mafute fishermen and 62% of onaga fishermen making commercial sales participated for only a single year and no fishermen participated in all 6 years (regardless of how small the sales). Fishermen utilizing larger vessels have greater access to the deep-water bottomfish resources, especially in the northern islands of the CNMI. However, this sector of the industry requires more investment, consistent long-term effort, and knowledge to recoup the costs than the shallow-water bottomfish sector. This industry could continue to expand with support from a training program in bottomfishing that addresses the following: proper fish handling and maintenance of product quality, use of fathometers, nautical charts, modern electronic equipment such as GPS, fish finders, electric reels, anchoring techniques, marketing, and financial planning. Moreover, side-band sonar mapping of the banks used by commercial fishermen from Farallon de Medinilla to Rota should assist the growth of this sector.

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.

**Table C-4: Chronology of large vessel bottomfishing effort**

Vessels fishing shallow and deep water bottomfish in the Northern Islands								
Year	Vessel 1 (65-ft)	Vessel 2 (50-ft)	Vessel 3 (50-ft)	Vessel 4 (65-ft)	Vessel 5 (45-ft)	Vessel 6 (65- ft)	Vessel 7 (70-ft)	Vessel 8 (70-ft)
type	recreational deepwater charter	commercial fishing vessel	commercial fishing vessel	commercial fishing vessel	commercial fishing vessel	commercial fishing vessel	commercial 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 fishery	Fished	Fished

The redgill emperor, *Lethrinus 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, 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.

**Table C-5: Historical Annual Statistics for CNMI bottomfishes\***

year	total landings (lbs)	CPUE (lb/trip)	inflation-adjusted revenue (\$)	average price (per lb)	number of boats
1983	28529	53	97054	3.4	90
1984	42664	87	131,267	3.08	102
1985	40,975	145	117,717	2.87	55
1986	29,912	131	93,539	3.13	54
1987	49,715	210	142,838	2.87	43
1988	47,313	224	130,336	2.75	29
1989	24,438	95	73,965	3.03	29
1990	13,628	106	44,748	3.28	29
1991	7,116	57	25,385	3.57	20
1992	10,598	74	31,144	2.94	37
1993	18,461	104	52,235	2.83	20
1994	25,470	92	76,905	3.02	32
1995	36,102	116	128,992	3.57	34
1996	66,362	148	230,123	3.47	70
1997	64,090	170	216,833	3.38	69
1998	59,040	185	206,157	3.49	50
1999	56,201	196	205,158	3.65	51
2000	45,619	72	128,488	2.82	66
2001	71,660	86	219,183	3.06	75
<b>2002</b>	<b>47,110</b>	<b>126</b>	<b>135,823</b>	<b>2.88</b>	<b>53</b>
mean	39,250	124	124,394	3.15	50
standard deviation	19,107	51	64,522	0.29	23

\*Data from WPRFMC 2002 Bottomfish Annual Report

Data collection occurs primarily through the Commercial Purchase Database (CPD), which requires all buyers of fish to report the weight of each species of fish purchased, the date, fisher's and dealer's names and price per pound. 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 pounds for all non-commercial and commercial fishermen, respectively. The majority of these are reef fish (i.e., other than landings reported from Table C-5) 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 inshore 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 have never been reimplemented. 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 reimplemented 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 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, catch per unit effort (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.

### **PRIA**

Currently, there is no federal logbook for bottomfish anywhere in the Western Pacific region. 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 EEZs of 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. Although vessel operators are instructed to enter the coordinates of their area fished, many do not and in these cases a "miscellaneous area" descriptor is entered. To date, NMFS has not included these data when presenting annual catch totals. If the catch was not landed in Hawaii, the reporting requirement would be under the

regulations in place at the port of landing and data would not necessarily be gathered or transmitted to NMFS.

While little data exists on stock assessments, species composition, life history characteristics and other necessary information for detailed management, it is important to control the amount of fishing effort (employing the precautionary principle) while still allowing fishing as a means for data collection as well as to promote a possible new fishery. The new data from the 2000, 2001 and 2002 coral reef rapid ecological assessment joint agency cruises would benefit fisheries management for these areas when it becomes available.

### **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). These are management unit species under the Coral Reef Ecosystem FMP. Several outbreaks of ciguatera have been reported on Johnston which have been attributed to dredging operations. This has limited the take of fish for food, although catch and release is still common. Commercial fishing occurs at Palmyra Atoll and Kingman Reef and recreational fishing, through the Nature Conservancy, is being developed at Palmyra. The recent renovation of the air strip and construction of vessel provisioning facilities by a fishing venture may promote increased fishing activity in and around Palmyra and Kingman waters. Recent restrictions for pelagic and other fishing (NMFS 2001 Biological Opinion for the Pelagic Fishery and Department of Interior Secretarial Orders) could likely limit or prohibit this venture.

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, *Luganus bohar*, at Kingman Reef, of which they caught 40,000 pounds. 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.

### 6.1.3.3 Ecosystem and Stocks

#### CNMI Bottomfish Fishery

Reported commercial fishing catch has never exceeded 26 MT. The small vessel subsistence catch, which occurs primarily within 25 nm of the inhabited islands, is estimated not to exceed 10 MT per year. According to RAIOMA estimates, at most 52% of the CNMI bottomfish MSY (43.3 of 84 MT) has been caught in any given year. Table C-6 inputs 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 pounds). It is assumed that 100% of the landings from the large vessel fishery is reported. If equal amounts of the small-vessel caught bottomfish are reported and unreported, this could equal as much as 15,000 pounds each. This equates to a maximum of 65,000 pounds landed (29.5 MT) for reported and unreported bottomfish in a given year.

**Table C-6: 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)
<b>Southern Islands</b>	unavailable (part of 17.3)	10 MT	~ 10 MT	> 20 MT	39%, 32.75 MT
<b>N. Islands and W. Seamounts</b>	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. While fishing location data is not readily available, it is likely that Southern Islands fishing grounds are close to fully exploited and Northern Islands and Western Seamounts have been, to date, under-exploited.

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<sup>th</sup> Council Meeting minutes).

While the Northern Island 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, pers. comm.). Average annual bottomfish landings for the fishery in the past four years have been just under 50,000 pounds. Archipelago-wide total estimated sustainable bottomfish harvest is 185,000 pounds, of which 56% or 103,600 pounds 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.

While the fishing grounds near the inhabited Southern Islands are believed to be fully fished or overfished, the banks of the Northern Islands and seamounts are believed to be underfished, with further development possibilities.

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.

### **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.

### **6.1.3.3 Protected Species**

## CNMI

### **Sea Turtles**

Two species of sea turtles are known to inhabit the waters around the CNMI, the green sea turtle (*Chelonia mydas*), and the hawksbill sea turtle (*Eretmochelys imbricata*) (Kolinski et al., 1999). Under the US Endangered Species Act, hawksbill turtles are listed as endangered, and are protected under the Act. The green sea turtle is listed as threatened, and 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 (*Chelonia mydas*):** Based on nearshore surveys conducted jointly between the CNMI-DFW and the NMFS around the Southern Islands (Saipan-1999, Rota and Tinian-2001), an estimated 1,000 to 2,000 green sea turtles forage in these areas (Seman, 2002). 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 & USFWS, 1998a). 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 (*Eretmochelys imbricata*):** Hawksbill turtles have occasionally been observed in the past around the CNMI. However, they were not observed in a detailed assessment conducted in 1999, 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 & 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 sight 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.

### **Marine Mammals**

**Cetaceans:** Humpback whales (*Megaptera 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. Sightings of these species are rare, and interactions are not likely to occur in these fisheries.

**Pinnipeds and Sirenians:** No pinnipeds or sirenians species are known to occur in CNMI waters.

### **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-petrel (*Oceanodroma leucorhoa*), Matsudaira's storm-petrel (*Oceanodroma matsudairae*), and the red-footed booby (*Sula sula*). Of these, only the Newell's shearwater is listed as endangered. 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 Tora Shima, Japan.

## **PRIA**

### **Sea Turtles**

**Green sea turtle (*Chelonia 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 have 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.

Based on data collected by Hawaii observers, very few interactions occur between green sea turtles and bottomfish or lobster gear. Interactions are increasing, however, in shoreline and nearshore recreational fisheries in the Main Hawaiian Islands and the recreational fishery in the PRIA should be monitored for this occurrence.

**Hawksbill turtle (*Eretmochelys 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.

### **Marine Mammals**

**Cetaceans and Other Whales:** At Johnston Atoll the rare Cuvier's beaked whale (*Ziphius cavirostris*) is regularly seen offshore, and according to one report may actually calve in the lagoon (Green 1997). Spinner dolphins, Pacific bottle-nose dolphins (*Tursiops truncatus*) and Cuvier's beaked whales are thought to occur at Wake Island. Pilot whales (*Globicephala*

*macrorhynchus*) also are likely visitors to the PRIA. The bottle-nosed dolphin has been reported to remove fish from handline bottomfishing 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. Dolphins have also been reported preying on the discarded fish associated with bottomfishing operations, where potential ciguatoxin poisoning from discarded fish is possible.

## **Pinnipeds**

In 1976 the Hawaiian monk seal (*Monachus 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 exception of low but increasing numbers of 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), and there was an exceptional reported of a pupping at Johnston Atoll in 1969, site visits by biologists have been infrequent so it is not clear how regularly monk seals use the atolls.

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 resighted recently.

A female monk seal appeared at Johnston Atoll in 1968, the first was tagged as a pup on Laysan and 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 indicated 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).

Monk seals have not been reported in CNMI, GUAM and American Samoa and most of the PRIAs,<sup>2</sup> having been very rarely sighted at Johnston and Palmyra. 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

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<sup>2</sup>

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.

indicates that 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 (*Phoebastria 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, interactions with Laysan albatrosses (*Diomedea immutabilis*) and black-footed albatrosses (*D. 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, circle hooks used in the bottomfish fishery do not lend easily to snagging and no hookings, injuries or mortalities were reported.

#### **6.1.3.4 Essential Fish Habitat (EFH) and Habitat Areas of Particular Concern (HAPC) for Potential New BMUS species**

In 1998, the Council designated EFH for the four existing FMPs in the Sustainable Fisheries Act (SFA) amendment which addressed new requirements under the 1996 reauthorization of the Magnuson Stevens-Act. In that amendment, the Council identified EFH based on suggested guidelines and the level of available environmental and fisheries information. 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. A similar logic applies for EFH designation for these amendments.

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.

Essential fish habitat means those waters and substrate necessary to fish for spawning, breeding, feeding or growth to maturity. The purpose of this section is to identify and describe EFH for proposed new Bottomfish Management Unit Species, 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.

Except for several of the major commercial species, very little is known about the life histories, habitat utilization patterns, food habits or spawning behavior of most adult bottomfish and seamount groundfish species. Furthermore, very little is known about the distribution and

habitat requirements of juvenile bottomfish.

Generally, the distribution of adult bottomfish in the western Pacific region is closely linked to suitable physical habitat. Unlike the US mainland with its continental shelf ecosystems, Pacific islands are primarily volcanic peaks with steep drop-offs and limited shelf ecosystems. The BMUS under the Council's jurisdiction are found concentrated on the steep slopes of deepwater banks. The 100-fathom isobath is commonly used as an index of bottomfish habitat. Adult bottomfish are usually found in habitats characterized by a hard substrate of high structural complexity. The total extent and geographic distribution of the preferred habitat of bottomfish is not well known. Bottomfish populations are not evenly distributed within their natural habitat; instead they are found dispersed in a non-random, patchy fashion. Deepwater snappers tend to aggregate in association with prominent underwater features, such as headlands and promontories.

There is regional variation in species composition, as well as a relative abundance of the MUS of the deepwater bottomfish complex in the western Pacific region. In American Samoa, Guam and the Northern Mariana Islands the bottomfish fishery can be divided into two distinct fisheries, a shallow- and a deep-water bottomfish fishery, based on species and depth. The shallow-water (0–100 m) bottomfish complex is comprised of groupers, snappers and jacks in the genera *Lethrinus*, *Lutjanus*, *Epinephelus*, *Aprion*, *Caranx*, *Variola* and *Cephalopholis*. The deep-water (100–400 m) bottomfish complex is primarily comprised of snappers and groupers in the genera *Pristipomoides*, *Etelis*, *Aphareus*, *Epinephelus* and *Cephalopholis*. In Hawaii the bottomfish fishery targets several species of eteline snappers, carangids and a single species of groupers. The target species are generally found at depths of 50–270 m.

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 (Appendix I). Careful judgement 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.

In addition to the narratives, the general distribution and geographic limits of EFH for each life history stage are presented in the forms of maps (Appendix II). The Council incorporated these data into a geographic information system to facilitate analysis and presentation. More detailed and informative maps will be produced as more complete information on population responses to habitat characteristics (e.g., growth, survival or reproductive rates) becomes available.

#### **6.1.4 Environmental Impacts of the Alternatives**

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

None of the action alternatives examined here are anticipated to directly 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, 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 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 Areas of Particular Concern**

###### **Adverse impacts to EFH from fishing activities**

The predominant fishing gear type used in the CNMI bottomfish fishery is hook-and-line. The Northern Island fishery uses hydraulically powered gear, while the inshore Southern Island fishery predominantly uses hand powered gear. Both of these types cause few fishing-related impacts to the benthic habitat. Alternatives that would include CNMI and the PRIA in the Bottomfish FMP would prohibit the use of bottom trawls, bottom-set nets, explosives and poisons.

The Council has determined that current management measures to protect fishery habitat are adequate and no additional measures are necessary 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.

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 marine debris on habitat are not adverse. However, the Council is concerned that marine debris originating from fishing operations outside the Council's area may have impacts on habitat. The source of this debris and its impacts are being investigated by NMFS. International cooperation would be necessary to find solutions to this broader problem.

The Council's current management measures to protect fishery habitat in the other island areas have been determined as adequate. Including the CNMI and PRIA under these regimes would impart the same level of habitat protection. Should future research demonstrate a need, the Council would act accordingly to protect habitat necessary to maintain a sustainable and productive fishery in the western Pacific Region.

#### **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 were presented and approved in the SFA amendment and are not repeated here.

#### **6.1.4.3 Impacts on Public Health and Safety**

None of the 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, no action alternatives for FMP inclusion could result in active and unregulated fisheries with the potential for unsafe fishing or harvesting practices.

**Table C-7. 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 Fishery Management Plans.** All areas are bounded by the shoreline, and the outward boundary of the EEZ, unless otherwise indicated.

<b>SPECIES GROUP (FMP)</b>	<b>EFH (juveniles and adults)</b>	<b>EFH (eggs and larvae)</b>	<b>HAPC</b>
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 down to 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

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

Impacts of the fisheries affected by these 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 anticipated to adversely impact threatened or endangered species, including marine mammals. In addition, none of the action alternatives examined here 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 the FMP (no action) may result in their continued exclusion from consultations under the Endangered Species Act.

#### **6.1.4.5 Cumulative Impacts on Target and Non-target Species**

Based on historical and predicted fishing effort and the condition of affected stocks, none of the action alternatives examined here are anticipated to increase current fishing effort, or to encourage the use of destructive gears or other activities that would cumulatively impact the sustainability of target or non-target species. 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 Impacts on Biodiversity and Ecosystem Function**

The action alternatives are not expected to have substantial impacts on biodiversity and ecosystem functions within the affected areas (e.g. benthic productivity, predator-prey relationships etc.), 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 alter significantly 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.

#### **6.1.4.7 Social and Economic Impacts**

Impacts on fishery participants, fishing communities, and the broader society vary by issue and alternative. Impacts on fishery participants of alternatives that would include the CNMI and the PRIA fisheries in the Bottomfish FMP would be greatest for those that include permitting, reporting and precious coral quota requirements and least for the no action alternatives. However, even the most restrictive of these alternatives would be anticipated to have minor effects as the affected fisheries are small and the required changes would be small (requirements to obtain federal permits and submit federal logbooks). 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. Assuming their incorporation into the relevant FMPs, the social and economic impacts of action alternatives for designating additional management unit species, and defining essential fish habitat and habitat areas of particular concern are negligible as management of these species and areas is anticipated to mirror those measures already in place for existing management unit species.

### **6.1.5 Reasons for Choosing the Preferred Alternatives**

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

##### **Alternative 1. No Action**

Currently, only non-commercial fishing regulations are in force in CNMI. Although the “CNMI Fisheries Act”, drafted in 1997, would allow for such 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 attached conditions to these business licenses to allow for the sampling of the catch, this has not

always been successful (M. Trianni, pers. comm.).

Under the no action scenario, fishery data would continue to be obtained through creel surveys and the Commercial Purchase Database (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. Concern for overcapitalization, followed by overfishing to recuperate investment, is a real concern which may not be adequately addressed under the current management regime. In addition, although it is likely that data collection from the large vessels would continue, the lack of an effective regulatory regime makes it difficult to ensure voluntary compliance and, more broadly, the longevity of data gathering efforts.

The Council rejects the 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 2. Include the CNMI EEZ as a subarea under the Bottomfish FMP, with regulations applied to the offshore zone between 3-200 nm from shore (preferred).**

Under this preferred alternative the waters around CNMI from 0 to 200 nm would become a defined management subarea, under the Bottomfish FMP. Fishing for Bottomfish Management Unit Species in the offshore area (3-200 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 for this offshore area. Measures now under consideration by the Council would institute such requirements for this fishery.

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 (0-3 miles). At the same time, this alternative would allow the Council to regulate the expanding and technologically advanced large vessel fishery, which occurs in the offshore zone, if future data suggests that action is needed. Indeed, the Council is currently considering regulation of vessels in the offshore zone, and inclusion of the fishery in the

Bottomfish FMP is a prerequisite for this type of management action.

Affected vessels would be subject to federal regulations for the bottomfish fishery enumerated in Part 660 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 for 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 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

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 is carried out by the DFW with help from the Western Pacific Fisheries Information Network (WpacFIN). Further changes to the regime in 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 subarea under the Bottomfish FMP would allow relatively streamlined implementation of needed management measures through the framework process.

In summary, the Council chose this as the preferred alternative for the following reasons: (1) management of small-boat fisheries would remain in local hands, (2) if current data collection methods become inadequate or data needs change as the fishery develops, the Council would have the authority to require more appropriate data submission by the fishery, (3) including the CNMI in the Bottomfish FMP allows for future adaptive management, as necessary.

**Alternative 3. Include the CNMI EEZ as a management subarea under the Bottomfish FMP, with regulations applied to the offshore zone between 3-200 nm from shore and a new federal permitting and data reporting requirement for larger commercial vessels targeting BMUS.**

Large commercial vessels have caught up to 60 % of the reported commercial CNMI bottomfish landings. The Large Vessel Bottom 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 now; and (2) this alternative can be implemented at a later date if warranted.

#### **6.1.5.2 Inclusion of the PRIA fisheries in the Bottomfish FMP**

##### **Alternative 1. 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.

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 at Palmyra and cannot make the 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 bottomfishing 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.

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 in near-shore waters since federal jurisdiction extends to the shoreline and 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 660.62 and 660.64) throughout the PRIA EEZ.

The Council rejected the no action alternative because: (1) inclusion of the PRIA in the Bottomfish FMP would immediately prohibit the use of destructive fishing gears; (3) without inclusion of the PRIA in the Bottomfish FMP, there is no basis to implement adaptive management measures when and if needed;

**Alternative 2. Include the PRIA EEZ as a management subarea 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 660 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 for 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 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; (2) the potential for air freighting fish from Palmyra has created a loophole in the current reporting requirements; and (3) current reporting systems may not include adequate information for fishery management, including detailed effort, protected species interactions and bycatch data

**Alternative 3. Include the PRIA EEZ as a management subarea in the Bottomfish and Seamount Groundfish FMP, implement federal permitting and reporting requirements. (preferred).**

The preferred alternative expands on Alternative 2 with new permitting and reporting requirements that address the existing loophole for fish airfreighted from the PRIA (e.g. Palmyra Atoll) to Hawaii. In addition to including the PRIA as a subarea 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 the activity in these areas). The remaining regulations put forth in the previous alternative to include the PRIA as a Bottomfish FMP subarea 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; (2) federal logbooks require documentation of protected species interactions, detailed effort and bycatch data while the Hawaii form does not require this data; and (3) federal reporting requirements will close the loophole for fish airfreighted out of Palmyra.

**6.1.5.3 Addition of Management Unit Species to the Bottomfish and Seamount Groundfish FMP**

**Alternative 1. 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 sporadically, and implementation of measures for these species would be difficult.

The Council rejected the no action alternative because it would fail to include allow management of these developing target species.

**Alternative 2. Add the species from Table C-2 to the Bottomfish and Seamount Groundfish FMP (preferred).**

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 chose this as its preferred alternative because effective management of these species requires their inclusion as management unit species in the appropriate FMPs.

#### **6.1.5.4 Alternatives Considered in the Designation of EFH and HAPC for New Bottomfish MUS.**

Due to large gaps in scientific knowledge on the life histories and habitat requirements of many of the species to be included under these amendments, the Council has adopted a precautionary approach in designating EFH and HAPC for new Bottomfish MUS across the western Pacific region. The absence of any data regarding precious corals MUS in CNMI precluded designation of EFH and HAPC outside of Hawaii at this time. Several alternative approaches for EFH designation were considered and are listed as follows: (1) no action; (2) designate individual EFH for each species; (3) designate EFH by family groups or at a higher taxonomic level; (4) designate EFH by habitat composites; (5) designate EFH by fishing method; (6) designate EFH by depth range of MUS.

The Council endorses an approach to designating EFH which best represents the available data and knowledge of the fishery. Bottomfish, crustacean and precious corals MUS are linked to general habitats, differentiated by fishing method (e.g., deep slope bottomfishing, shallow bank handlining, trap fishing, hand harvest) and some limited scientific and fisheries data for the post-larval stages. Egg and larval stages are defined more broadly based on available information for these life history stages.

##### **Alternative 1. No Action.**

Alternative 1 would continue the status quo. No new EFH and HAPC would be designated for the 48 proposed bottomfish MUS. This is not a viable alternative as the Magnuson-Stevens Act mandates that any FMP shall describe and identify essential fish habitat for the fishery based on the guidelines established under Section 305(b)(1)(A); minimize to the extent practicable adverse effects on such habitats caused by both fishing and non-fishing activities and; identify other actions to encourage the conservation and enhancement of such habitat.

##### **Alternative 2. Designate individual EFH and HAPC for each species.**

Alternative 2 would attempt to identify and describe individual EFH and HAPC for each of the

proposed bottomfish species in the entire western Pacific region. This would assume that there has been systematic sampling conducted in the Western Pacific Region to adequately identify species and their habitat requirements, densities, productivity and temporal and spatial distribution of each major life history stage. However, data for most of the species affected by these amendments are at the Level 1 guideline or are unavailable for some regions. Current monitoring practices of the proposed bottomfish species is beginning to provide data which may be useful in refining EFH and HAPC. Available fishery-independent data for the proposed species, described in this document, may also aid in species-specific EFH and HAPC designations in the future. At the present time, data for most of the proposed species are non-existent or at the Level 1 guideline. Information for the remaining MUS affected by these amendments cannot be assessed beyond the Level 2 rating.

**Alternative 3. Designate EFH and HAPC by family groups or at higher taxonomic level.**

Alternative 3 would designate EFH and HAPC by family groups or at a higher taxonomic level. A higher taxonomic grouping of closely related species allows for broader designation of EFH and HAPC and thus strengthens protection of EFH and HAPC, as family groups frequently utilize common habitat and exhibit similar life history characteristics. However, diversity of habitat use and dependance may be greater within some families than between families. For example, the family Lutjanidae include 16 genera and nearly 100 species in the Western Pacific Region. The range of some species in the subfamily Lutjanus are known to occur from the shoreline and have also been observed at depths below 50 fathoms (Ota and Parrish 1981). On the other hand, the range of some species in the subfamily Etelinae, such as the genus *Pristipomoides*, are believed to occur on bottom habitat from 40 meters down to a depth of 400+ meters. Based on a Level 1 rating, EFH and HAPC for the family Lutjanidae could arguably encompass the entire water column down to 400+ meters and to the extent of the EEZ. Consequently, a broad designation of EFH and HAPC at higher taxonomic levels could compromise the justification of the EFH and HAPC designation when information is not available beyond a Level 2 rating.

**Alternative 4. Designate EFH and HAPC by habitat composites.**

Except for a few of the proposed bottomfish species, very little is known about the life histories, habitat utilization patterns, food habits or spawning behavior of most of the proposed bottomfish in the western Pacific region. It is completely unrealistic and inefficient to give every small unit of shallow and deep habitat equal amounts of management attention. To avoid directing the limited management resources available toward inconsequential problems, the Council needs to be able to make distinctions and to recognize the occurrence of patterns (i.e., the repetition in space and/or in time, of similar conditions and events). Classification of the environment according to habitat types is a logical first step toward pattern recognition. With the inclusion of factors that account for biological community structure and function, a classification system could evolve toward an ecosystem form of resource management. The most practical approach is to utilize physical attributes, and, conceptually at least, arrive at a community approach as subcategories once the latter become evident through closer scrutiny. This is the preferred approach for the Fishery Management Plan for Coral Reef Ecosystems in the Western Pacific (WPRFMC, 2000a).

Beginning with the Year of the Reef in 1997, coral reef ecosystem research has received substantial funding in the past four years. This has allowed for increased in situ research and development of technology with the potential for specific characterization of huge areas of habitat to a fine scale with the use of satellite imagery. To date, much of this work has been done in the MHI and NWHI. This technology, and the associated in situ groundtruthing, is limited to a maximum depth of 10 fathoms. Classification below this depth remains extremely costly, and to date, little work has been done in this realm. EFH and HAPC designation through habitat characterization is becoming viable in shallow waters, but remains impractical in habitats below 10 fathoms. Cooperative research conducted in the past three years by NMFS and USFWS in the NWHI, PRIA and American Samoa would provide additional information on this shallow water habitat. Those data would be analyzed and made available in the next few years.

At this time, the body of scientific information does not lend itself to characterizing EFH and HAPC for bottomfish MUS by habitat composites. As ecosystem management is preferred, the Council would work towards this goal for future EFH and HAPC designations and revisions.

**Alternative 5. Designate EFH and HAPC by fishing method.**

In Pacific island fisheries, species and species complexes are targeted more by fishing method than by fishing area. Due to the steep nature of the bottom topography in Pacific islands, depth changes rapidly and fishermen would alter their fishing methods rather than location to catch the preferred species. The available data in most cases outside of the Hawaiian archipelago come from creel surveys and catch reports. Thus, in a Level 1 data situation, fishing method is the distinguishing characteristic.

In most cases, even if preferred habitat type (e.g., sandy bottom, high relief, algal field) for a given MUS is known, physical characteristics of the habitat in the management area are not described. In many areas, even accurate topographic maps are not available. Thus, defining and mapping specific EFH and HAPC is presumptuous. Yet, the fishery data does give the most accurate idea of at what depth and in what island areas the adult and juvenile stages of current and proposed MUS are found.

One of the driving factors of these amendments is to more fully represent the fisheries occurring outside of Hawaii, considering data, fishing methods and island-specific characteristics of the other island areas. The current bottomfish MUS list is Hawaii-centric, predominantly consisting of those species caught in the NWHI commercial fishery. The bottomfish annual report, the species profile list (Appendix I) and the SFA amendment differentiate bottomfish between shallow and deep-water complexes, based primarily by fishing method. EFH and HAPC have been designated for these species in Amendment 6 for the Bottomfish FMP. All but one of the species proposed in these amendments are reported regularly in creel surveys, catch reports and sales receipts in American Samoa, Guam and the CNMI. These species are separated into shallow and deep-water complexes based on the above-listed fishery information collection methods.

The difference between the NWHI commercial fishery and fishing methods in the trust territories is a major consideration in the designation of EFH and HAPC. In general, fishing outside of Hawaii consists of small vessels, on one-day trips and fishing with hand-powered lines and reels. Most fishermen are not able to target the deep-slope fish which are the primary target in the NWHI. While currently listed species are found in the other island areas, they do not constitute the targeted species for most of the fishermen.

While much of the information available to designate EFH and HAPC does emanate from fisheries data as described in this section, non-fishery data is also used when available. This includes data from available literature (which has been heavily relied on in Appendix B), underwater surveys and various methods of remote sensing. The Council noted that this alternative does not incorporate all the available data. In addition, they stated that the designation of EFH and HAPC should be based on the habitat, and not the activities occurring in the area.

**Alternative 6. Designate EFH and HAPC by depth range of Management Unit Species List (preferred).**

As described in Alternative 5, the paucity of information available for species life histories and habitat characterization below 10 fathoms across the western Pacific restricts species specific EFH and HAPC designation. Due to the lack of comprehensive life history information, a broad and precautionary designation of EFH and HAPC could provide better habitat protection. Thus, including all habitat where all MUS species may be found in every stage of their life would require impact analysis of all potential MUS habitat.

Regarding bottomfish, the annual report, the species profile list (Appendix I) and the SFA amendment differentiate bottomfish between shallow and deep-water complexes, based primarily by fishing method. Language from the SFA amendment recognizes that habitats utilized by the shallow and deep-water complexes are often overlapping. Thus, EFH has been designated for both species complexes as 0-200 fathoms in Amendment 6 for the Bottomfish FMP. This includes EFH and HAPC designation for the CNMI, prior its incorporation under the Bottomfish FMP (proposed here). Regarding the proposed Bottomfish MUS, all but one (*Pontinus macrocephala*) are reported regularly in creel surveys, catch reports and in sales receipts in American Samoa, Guam and the CNMI. These species have also been separated into shallow and deep-water complexes based on the fishery method information collected in the island areas. The last is a deep-water species caught occasionally in the NWHI. As the rationale for designating EFH and HAPC for the proposed species parallels that from the SFA amendment, it is appropriate to follow the same procedure.

**6.2 Regulatory Flexibility Act**

The Regulatory Flexibility Act (5 USC 601 *et seq.*) (RFA) requires that agencies assess and present the impacts of their proposed actions on small business entities. These measures would affect current and potential bottomfish, crustacean and precious corals fishery participants in the CNMI and PRIA, all of whom are considered to be small business entities. The impact to these

small businesses would be the compliance requirements and costs of permitting and reporting. Those most likely to apply for a permit and fill out logbooks are NWHI bottomfishermen exploring new areas, Hawaii longline fishermen using mixed gear in the PRIA, and possibly precious coral harvesters from the main Hawaiian islands. These operators are already familiar with the compliance requirements, permitting and reporting system that would be initiated through these amendments.

Compliance costs are mostly due to a flat rate per vessel cost for the annual permit. The cost has not been determined but for comparison, NWHI, Mau zone bottomfish vessel permits are renewed annually at a cost of \$65.

While destructive fishing would be prohibited through these amendments, by subjecting these fisheries to existing regs contained in the relevant FMPs, including bans on the use of bottomset trawls, poisons, explosives, etc.. There is no documentation that vessel operators have used these methods in the CNMI or PRIA. These amendments would not alter current legal fishing practices.

The focus of these amendments is to allow for effective fisheries management in the future and protect the resource from unregulated activities which could be detrimental. This measures are not expected to affect fishing operations and would have only a minor effect on permit application and data collection requirements for a small number of participants (see Section 6.2 on PRA requirements). For these reasons the Council believes that this action is not significant for the purposes of the Regulatory Flexibility Act and no Initial Regulatory Flexibility Analysis has been prepared.

### **6.3 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 (Appendix III) 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 out of legal mandates, or the principles set forth in the Executive Order. Based on these findings, this rule is believed not be significant under E.O. 12866.

### **6.4 Coastal Zone Management Act**

The CZMA requires a determination that a 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 has not been done for these areas.

These amendments do not propose any action which would promote harmful operational practices. The focus of these amendments is to allow for easier fisheries management in the future. It would also begin to protect the resource from unregulated activities which could be detrimental.

## **6.5 Endangered Species Act**

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 north pacific include:

### **Species listed as endangered**

Short-tailed albatross (*Phoebastria albatrus*)  
Hawaiian monk seal (*Monachus schauinslandi*)  
Pacific olive ridley turtle (*Lepidochelys olivacea*)  
Leatherback turtle (*Dermochelys coriacea*)  
Hawksbill turtle (*Eretmochelys imbricata*)  
Green turtle (*Chelonia mydas*) - Florida and Pacific coast of Mexico breeding populations only  
Humpback whale (*Megaptera novaeangliae*)  
North Pacific Right Whale (*Eubalaena japonica*)  
Sperm whale (*Physeter macrocephalus*)  
Blue whale (*Balaenoptera musculus*)  
Fin whale (*B. Physalus*)  
Sei whale (*B. Borealis*)

### **Species listed as threatened**

Loggerhead turtle (*Caretta caretta*)  
Asian stocks of Pacific olive ridley and green turtles

Paucity of data and observer coverage greatly limit our knowledge of interactions between the domestic squid jig fishery and any non-target species. However, there have been no reported interactions between this fishery and any listed species.

A Biological Opinion (BiOp) on the Bottomfish FMP was issued by NMFS on March 8, 2002 (NMFS, 2002). This opinion is available from NMFS' Pacific Islands Regional Office (1601 Kapiolani Blvd. Suite 1110, Honolulu, HI 96814) and is hereby incorporated by reference in its entirety. The BiOp found that the ongoing operations of the fishery as currently defined (EEZ

waters around Hawaii, American Samoa and Guam) are not likely to jeopardize the continued existence of the Hawaiian monk seal, blue whales, fin whales, humpback whales, right whales, sei whales, sperm whales, and leatherback, loggerhead, and olive ridley sea turtles. Following is a description of what is known about the presence and status of these species. Data on fishery interactions is unavailable as these areas are not subject to 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.

## **CNMI**

### **Sea Turtles**

Two species of sea turtles are known to inhabit the waters around the CNMI, the green sea turtle (*Chelonia mydas*), and the hawksbill sea turtle (*Eretmochelys imbricata*) (Kolinski et al., 1999). Under the US Endangered Species Act, hawksbill turtles are listed as endangered, and are protected under the Act. The green sea turtle is listed as threatened, and 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 (*Chelonia mydas*):** Based on nearshore surveys conducted jointly between the CNMI-DFW and the NMFS around the Southern Islands (Saipan-1999, Rota and Tinian-2001), an estimated 1,000 to 2,000 green sea turtles forage in these areas (Seman, 2002). 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 & USFWS, 1998a). 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 (*Eretmochelys imbricata*):** Hawksbill turtles have occasionally been observed in the past around the CNMI. However, they were not observed in a detailed assessment conducted in 1999, 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 & 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 sight 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.

### **Marine Mammals**

**Cetaceans:** Humpback whales (*Megaptera 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. Sightings of these species are rare, and interactions are not likely to occur in these fisheries.

**Pinnipeds and Sirenians:** No pinnipeds or sirenians species are known to occur in CNMI waters.

### **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-petrel (*Oceanodroma leucorhoa*), Matsudaira's storm-petrel (*Oceanodroma matsudairae*), and the red-footed booby (*Sula sula*). Of these, only the Newell's shearwater is listed as endangered. 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 Tora Shima, Japan.

#### **Additional species listed as threatened and endangered in CNMI (Source US FWS)**

Mariana crow (*Corvus kubaryi*)

Nightingale reed warbler (*Acrocephalus luscini*)

Mariana common moorhen (*Gallinula chloropus guami*)

Mariana fruitbat (*Pteropus mariannus*)

Bridled white-eye

Mariana swiftlet (*Aerodramus bartschi*)

Tinian monarch

Micronesian megapode (*Megapodius laperouse*)

Sheath-tailed bat (*Emballornura semicaudulata*)

These are all terrestrial species and as such are unlikely to be impacted by this amendment.

#### **PRIA**

##### **Sea Turtles**

**Green sea turtle (*Chelonia 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 have 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, in shoreline and nearshore recreational fisheries in the Main Hawaiian Islands and the recreational fishery in the PRIA should be monitored for this occurrence.

**Hawksbill turtle (*Eretmochelys 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.

## **Marine Mammals**

**Cetaceans and Other Whales:** At Johnston Atoll the rare Cuvier's beaked whale (*Ziphius cavirostris*) is regularly seen offshore, and according to one report may actually calve in the lagoon (Green 1997). Spinner dolphins, Pacific bottle-nose dolphins (*Tursiops truncatus*) and Cuvier's beaked whales are thought to occur at Wake Island. Pilot whales (*Globicephala macrorhynchus*) also are likely visitors to the PRIA. The bottle-nosed dolphin has been reported to remove fish from handline bottomfishing 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. Dolphins have also been reported preying on the discarded fish associated with bottomfishing operations, where potential ciguatoxin poisoning from discarded fish is possible.

## **Pinnipeds**

In 1976 the Hawaiian monk seal (*Monachus 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).

although 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 again recently.

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, 1992).

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 (1986, NMFS, unpubl. data). Since monk seal protective measures were implemented via an amendment to the Crustacean 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 level of interaction between monk seals and fisheries in the PRIA is expected to be minimal, due to the experience in the NWHI fishery and the small number of monk seals around the PRIA.

### **Seabirds**

Of the many species of seabirds recorded found in the PRIA, only the short-tailed albatross (*Phoebastria 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, interactions with Laysan albatrosses (*Diomedea immutabilis*) and black-footed albatrosses (*D.*

*nigripes*) were observed in the NWHI bottomfish observer program from 1990 through 1993 (Nitta, 1993). These interactions were characterized by attempted bait theft. Although there is a possibility of accidental hooking, circle hooks used in the bottomfish fishery do not lend easily to snagging and no hookings, injuries or mortalities were reported.

## 6.6 Marine Mammal Protection Act

All fisheries of the Western Pacific Region including the squid jigging fishery, are classified as Category III under Section 118 of the Marine Mammal Protection Act of 1972 (62 FR 28657, May 27, 1997), except for the Hawaii long line fishery which has been re-categorized in 2004 as Category I under the MMPA. Marine mammals not listed as endangered or threatened under the Endangered Species Act that have been observed in the north pacific include:

Pacific white-sided dolphin (*Lagenorhynchus obliquidens*)

Rough-toothed dolphin (*Steno bredanensis*)

Risso's dolphin (*Grampus griseus*)

Bottlenose dolphin (*Tursiops truncatus*)

Pantropical spotted dolphin (*Stenella attenuata*)

Spinner dolphin (*Stenella longirostris*)

Striped dolphin (*Stenella coeruleoalba*)

Melon-headed whale (*Peponocephala electra*)

Pygmy killer whale (*Feresa attenuata*)

False killer whale (*Pseudorca crassidens*)

Killer whale (*Orcinus orca*)

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

Blainville's beaked whale (*Mesoplodon densirostris*)

Cuvier's beaked whale (*Ziphius cavirostris*)

Pygmy sperm whale (*Kogia breviceps*)

Dwarf sperm whale (*Kogia simus*)

Bryde's whale (*Balaenoptera edeni*)

Pilot whale (*Globicephala macrorhynchus*)

It is unlikely that the proposed management measures in this appendix 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 do not lead to serious injury or fatal interactions.

The monk seal has occasionally been seen at three of the PRIA. 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. At Johnston Atoll the rare Cuviers' beaked whale (*Ziphus cavirostris*) is regularly seen offshore, and according to one report may actually calve in the lagoon (Green 1997). Spinner dolphins, Pacific bottle-nose dolphins (*Tursiops truncatus*) and Cuvier's beaked whales are thought to occur at Wake Island. Pilot whales (*Globicephala macrorhynchus*) also are likely visitors to the PRIA.

The bottle-nosed dolphin has been reported to remove fish from handline bottomfishing 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. Dolphins have also been reported preying on the discarded fish associated with bottomfishing operations, where potential ciguatoxin poisoning from discarded fish is possible. Sightings of these species are rare in these regions and interactions are not likely to occur in these fisheries.

## **6.7 Paperwork Reduction Act**

The purpose of the PRA is to control the burden on the public (i.e. fishermen), businesses, county, state, and territorial governments, and other entities of providing information to the federal government. 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 this document's preferred alternatives that would include CNMI and the PRIA in the various FMPs require some additional paperwork. As outlined in Table C-8, owners of vessels would be required to obtain a federal permit and register it to any vessel they intend to use to fish for bottomfish in the PRIA. These permitting requirements are not duplicative and reflect permitting requirements in other areas under Council jurisdiction. Reporting requirements for these areas could include reporting types and quantity of gear used, units of gear set, time at start and end of set, units of gear lost, numbers and weights of species kept, numbers released, reason for discards, how the catch is processed, area(s) fished, length of the trip, average weather conditions, depth of area fished, observed damage to the coral reef, and all protected species interactions. Time to complete the application has been estimated at 0.5 hours, valued at \$10. Required permits are expected to cost about \$50 per year, plus \$5 per trip.

### **Permits and Monitoring - Special Permits**

In general, any person who harvests coral reef ecosystem MUS in low-use MPAs would be required to have a Federal special permit issued by NMFS. The issuance of special permits would be on a case-by-case basis and based upon several factors including the potential for bycatch, the sensitivity of the area to the type of fishing proposed, and the level of fishing occurring in relation to the level considered sustainable in a low-use MPA. A person permitted and targeting non-CRE MUS under other fishery management plans would not be required to

obtain a special permit to fish in low-use MPAs. In addition to the permit requirement for low-use MPAs, special permits would be required for any directed fisheries on Potentially Harvested Coral Reef Taxa (PHCRT) within the regulatory area. The harvest of live rock and living corals would be prohibited throughout the federally managed U.S. EEZ waters of the region (except 0-3 miles around CNMI); however under special permits with conditions specified by NMFS following consultation with the Council, indigenous people could be allowed to harvest live rock or coral for traditional uses, and aquaculture operations could be permitted to harvest seed stock. Resource monitoring systems administered by the state, territorial, and commonwealth agencies would continue to collect fishery data on the existing coral reef fisheries that do not require special permits.

**Estimate of Permit Application and Reporting Burden and Cost**

Under the preferred alternatives, new reporting requirements would be introduced for fishing for bottomfish in the PRIAs. The FWS has established no-fishing zones around most of the PRIAs, but Johnson, Wake and part of Baker may be fished, as may any seamounts in the PRIA EEZs. There is very little evidence of fisheries for bottomfish in the PRIAs and it is expected that no more than 5 general permits will be issued annually.

A general permit is estimated to require 0.5 hours to complete and a special permit should take no more than 1 hour to complete, therefore the total burden of writing permits would be no more than 2.5 hours annually. The fishing report should take no more than 1 hour to complete per day and if a trip lasted 5 days, the total bottomfish reporting time for the PRIAs would be no more than 25 hours. At a rate of \$20 dollars per hour, the total cost for reporting would be no more than \$500 per annum.

**Table C-8. Paperwork Requirements**

<b>AREA/FMP</b>	<b>New permit requirement?</b>	<b>New reporting requirement?</b>
CNMI/bottomfish	<b>No.</b> Continue to follow existing DFW requirement	<b>No.</b> Continue to follow existing DFW requirement
PRIA/bottomfish	<b>Yes.</b> New federal permit requirement	<b>Yes.</b> New federal reporting requirement
New Bottomfish MUS	<b>No.</b> Follow existing permitting requirements	<b>No.</b> Follow existing reporting requirements

The additions to the list of bottomfish MUS will not be a significant reporting burden for fishermen, they will modify the details but not the amount of time needed to report.

These amendments will not create any additional record-keeping and reporting requirements due to the designation of Essential Fish Habitat and Habitat Areas of Particular Concern for new Bottomfish MUS.

## **6.8 Executive Order 12612 (Federalism)**

The amendments propose to include waters currently managed to an extent by the CNMI under the Council's management. While most fishing around the CNMI and currently managed by the DFW is for bottomfish and reef fish, which occur in the shallow near-shore waters, some does occur outside of 3 nm. As has been proposed in the Coral Reef Ecosystem FMP (WPRFMC 2001), these amendments proposes to defer management in 0-3 nm to CNMI authorities while managing fisheries 3-200 nm. This will facilitate funding for fishery research, Coast Guard enforcement, and other types of federal support while avoiding federalism implications.

Inclusion of the PRIA does not raise the federalism issue since the area is already under direct federal control through several of its agencies. The Department of Interior has authority over the land of Palmyra atoll, Johnston atoll, Kingman reef, Howland, Baker and Jarvis islands and some of the appurtenant reefs because they are National Wildlife Refuges managed by the USFWS. Waters around Kingman Reef, Johnston and Wake atolls are Defensive Sea Areas with specific restrictions enforced by the US Department of Defense. The Council has the authority to manage fishery resources from 0-200 nm from shore.

For the same reasons, inclusion of new bottomfish MUS in the Bottomfish FMP has no federalism implications.

## **6.9 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. 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.

## **6.10 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.

## **6.11 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 (0-3 nm) to the CNMI, the Council allows the regulation and development of traditional 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.

## **6.12 Essential Fish Habitat Consultation**

The designation of EFH in and of itself would not have any biological impact. However, the proposed NMFS consultation process should have an overall beneficial effect on habitats important to managed fisheries in the western Pacific region. A direct benefit of these measures is the compilation of information on the habitats and life history characteristics of managed species. This baseline information should facilitate the efforts of the Council and NMFS to assess cumulative impacts to EFH and propose measures to mitigate or avoid adverse impacts. Additionally, the review and compilation of the best available scientific data would serve to guide future research necessary to further describe and protect EFH. Second, EFH designation establishes a framework for NMFS and the Council to cooperatively comment on state and Federal agency actions affecting EFH. The comments of these agencies would, in turn, provide more specific guidance on how adverse impacts to EFH can be avoided or mitigated.

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