WESTERN PACIFIC REGIONAL FISHERY MANAGEMENT COUNCIL

Omnibus Amendment for the Western Pacific Region to Establish a Process for Specifying Annual Catch Limits and Accountability Measures

Including an Environmental Assessment

Amendment 1 to the Fishery Ecosystem Plan for the Pacific Remote Island Areas

Amendment 2 to the Fishery Ecosystem Plan for the American Samoa Archipelago

Amendment 2 to the Fishery Ecosystem Plan for the Mariana Archipelago

Amendment 3 to the Fishery Ecosystem Plan for the Hawaii Archipelago

Amendment 4 to the Fishery Ecosystem Plan for Pacific Pelagic Fisheries of the Western Pacific Region

February 24, 2011

Omnibus Amendment for the Western Pacific Region
to Establish a Process for Specifying
Annual Catch Limits and Accountability Measures

Including an Environmental Assessment

Amendment 1 to the Fishery Ecosystem Plan for the Pacific Remote Island Areas
Amendment 2 to the Fishery Ecosystem Plan for the American Samoa Archipelago
Amendment 2 to the Fishery Ecosystem Plan for the Mariana Archipelago
Amendment 3 to the Fishery Ecosystem Plan for the Hawaii Archipelago
Amendment 4 to the Fishery Ecosystem Plan for Pacific Pelagic Fisheries of the Western Pacific Region

February 24, 2011

Responsible Agency:

Pacific Islands Region
National Marine Fisheries Service (NMFS)
National Oceanographic and Atmospheric Administration (NOAA)
Honolulu, Hawaii

Responsible Official: Michael D. Tosatto
NMFS Regional Administrator
NOAA, NMFS, Pacific Islands Region

For Further Information Contact:

Michael D. Tosatto
NMFS Regional Administrator
1601 Kapiolani Blvd., #1110
Honolulu, HI 96814
(808) 944-2200

Responsible Council and Contact:

Kitty M. Simonds
Executive Director
Western Pacific Fishery Management Council
1164 Bishop St., Suite 1400
Honolulu, HI 96813
(808) 522-8220

Project No.: RIN 0648-AY93

Executive Summary

In 2006, the Magnuson-Stevens Fishery Conservation and Management Act (MSA) was reauthorized and included additional requirements to prevent and end overfishing, and rebuild overfished stocks. Under the MSA, Regional Fishery Management Councils (RFMC) are to amend their fishery management plans to include a mechanism for specifying annual catch limits (ACLs) for all fisheries at a level such that overfishing does not occur and to implement measures to ensure accountability (AM) for adhering to these limits. The MSA further directs that, unless otherwise provided for under an international agreement to which the U.S. participates, this mechanism must be established by 2010 for fisheries subject to overfishing, and by 2011 for all other fisheries. On January 16, 2009, the National Marine Fisheries Service (NMFS) published advisory guidelines under 50 CFR §600.310 (74 FR 3178) to assist RFMCs in implementing ACL and AM requirements.

To comply with the ACL and AM requirements, the Western Pacific Fishery Management Council (Council), in coordination with NMFS, prepared this omnibus amendment to the fishery ecosystem plans (FEP) for American Samoa, Hawaii, the Mariana Archipelago (Guam and the Commonwealth of the Northern Mariana Islands (CNMI)), Pacific Remote Island Areas, and Pacific Pelagic fisheries. This amendment describes the mechanism the Council will use to specify ACLs and AMs for each FEP fishery. Specifically, the proposed action described in this document consists of three components that would: 1) in each FEP, establish a mechanism the Council will use to determine ACLs and AMs , including a process for setting acceptable biological catch limits (ABCs); 2) adopt the ecosystem component (EC) species classification described in the NMFS advisory guidelines for National Standard 1 (NS1) so the Council can develop specific criteria for identifying EC species in subsequent amendments to the FEPs; and 3) identify pelagic management unit species that have statutory exceptions to the ACL and AM requirements. The ACL and AM mechanism is designed to ensure long term sustainability of the fishery resources under the Council's jurisdiction. If approved by NMFS, the Council will use this mechanism to determine ACL values and AMs, which NMFS must specify by rulemaking starting in fishing year 2011.

The mechanism described in this amendment was developed over the past four years and is informed by comment received from fishery scientists and managers, fishery policy analysts, representatives of fishery participants, as well as the general public. This omnibus FEP amendment was developed in accordance with the MSA and the National Environmental Policy Act (NEPA), as well as other applicable laws. Because the action described in this amendment does not implement any ACLs or AMs, the evaluation of environmental impacts is limited. This review indicated that environmental impacts, if any, are anticipated to be secondary in nature because environmental effects could result if a currently unrestrained fishery were to be restricted because a recommended ACL changes the conduct of the fishery. Until such time that specific ACL values and AMs are determined, however, the environmental impacts of actual specifications would be speculative and not appropriate for a full environmental evaluation. Accordingly, an environmental review will be conducted at the time that actual ACL and AM specifications and ecosystem component species designations are proposed.

The environmental assessment associated with this amendment includes a general discussion of the potential impacts of using ACLs and AMs in the affected fisheries. The integrated omnibus

FEP amendment and EA document is being made available to the public together with the draft proposed regulations.

NMFS is soliciting public comment on the omnibus FEP amendment including an EA, and the proposed rule. Instructions on how to comment on the document and the proposed rule can be found by searching on RIN 0648-AY93 at www.regulations.gov, or by contacting the responsible official or Council listed in this document.

Table of Contents

List of Figures

List of Tables

Appendices

List of Acronyms

ABC – acceptable biological catch
ACL(s) – annual catch limit(s)
ACT – annual catch target
AM(s) – accountability measure(s)
BET – bigeye tuna
CNMI – Commonwealth of the Northern Mariana Islands
DAR – Division of Aquatic Resources
DAWR – Division of Aquatic and Wildlife Resources of Guam
DFW – Division of Fish and Wildlife of the CNMI
DMWR – Department of Marine and Wildlife Resources of American Samoa
DOD – Department of Defense
EA – environmental assessment
EEZ – exclusive economic zone
EFH – essential fish habitat
EPA – Environmental Protection Agency
FEP – Fishery Ecosystem Plan
IATTC – Inter-American Tropical Tuna Convention
MPAs – marine protected areas
MSA – Magnuson Stevens Fishery Conservation and Management Act
MSP – marine spatial planning
MSRA – Magnuson Stevens Reauthorization Act
MSY – maximum sustainable yield
MUS – management unit species
NEPA – National Environmental Policy Act
NMFS – National Marine Fisheries Service
nm, nmi – nautical miles
NOAA – National Oceanic and Atmospheric Administration
NS1 – National Standard 1
OFL – overfishing limit
PRIA – Pacific Remote Island Areas
PIFSC – Pacific Islands Fishery Science Center
PIRO – Pacific Islands Regional Office
RFMO – Regional Fishery Management Organization
SDC – Status Determination Criteria
SSC – Science and Statistical Committee (of the Western Pacific Fishery Management Council)
USFWS – U.S. Fish and Wildlife Service
WCPFC – Western and Central Pacific Fisheries Commission

[This page left blank intentionally]

1.0 Introduction

In 2006, the Magnuson-Stevens Fishery Conservation and Management Act (MSA) was reauthorized and included additional requirements to prevent and end overfishing and rebuild overfished stocks. To comply with the additional statutory requirements, Regional Fishery Management Councils are to amend their fishery management plans to include a mechanism for specifying annual catch limits (ACL) for all fisheries at a level such that overfishing does not occur and to implement measures to ensure accountability (AM) for adhering to these limits. The MSA further directs that, unless otherwise provided for under an international agreement to which the U.S. participates, this mechanism must be established by 2010 for fisheries subject to overfishing, and by 2011 for all other fisheries.

In response to the additional statutory requirements, the Western Pacific Fishery Management Council (Council), in coordination with the National Marine Fisheries Service (NMFS) prepared this omnibus amendment to the fishery ecosystem plans (FEP) for American Samoa, Hawaii, the Mariana Archipelago (Guam and the Commonwealth of the Northern Mariana Islands (CNMI)), Pacific Remote Island Areas, and Pacific Pelagic fisheries. This omnibus amendment establishes the mechanism to specify ACLs and AMs for each fishery required to have an ACL in fishing year 2011. The mechanism incorporates methods of addressing scientific and management uncertainty when setting catch limits for the upcoming fishing year(s) and allows a suite of AMs to be applied to control catch (including both landings and discards) relative to those limits for each of the managed stocks or stock complexes subject to this requirement.

As part of the process to define a mechanism for determining ACLs and AMs, this omnibus amendment will:

(1) Establish a tier of acceptable biological catch (ABC) control rules that the Council's Science and Statistical Committee (SSC) will use to develop ABCs, which will be based on an analysis of fishery data, scientific uncertainty, and the probability or risk of overfishing;
(2) Establish a mechanism for the Council to determine ACLs at or below the SSC-recommended ABCs;
(3) Establish a suite of AMs the Council may apply to ensure fisheries do not exceed ACLs, or to account for overages of ACLs if they occur, including annual catch targets (ACTs);
(4) Describe the criteria that will be developed to designate stocks and stock complexes as ecosystem component species in the future;
(5) Identify stocks that are statutorily excepted from the ACL/AM requirement in 2011; and
(6) Describe the administrative processes and timelines the Council will follow to establish ABCs, ACLs and AMs.

If approved by NMFS, the Council will use this mechanism to determine ACL values and AMs, which NMFS will specify by rulemaking starting in fishing year 2011. The public will be notified of each specification annually. Additionally, the Council is proposing to amend the western Pacific Pelagic FEP to identify all Pelagic Management Unit species (PMUS) as stocks that qualify for statutory exceptions from the ACL/AM requirement on the basis that these

stocks/stock complexes are either subject to international management, or have an annual life cycle. The Council is also proposing to adopt the use of the ecosystem component (EC) classification so that it may develop criteria for identifying EC species in subsequent amendments to the FEPs. EC species are not targeted and generally not retained and, therefore, do not require an ACL or AM specification; however, EC species would remain in the respective FEPs for information gathering and other management purposes. Details of the three components of the proposed action are provided in section 3.0.

The mechanism described in this omnibus amendment was developed over the past four years and is informed by comments received from fishery scientists and managers, fishery policy analysts, representatives of fishery participants, and the general public. This amendment was developed in accordance with the MSA and the National Environmental Policy Act (NEPA), as well as other applicable laws. Because the action described in this amendment does not implement any specific ACL values or AMs, the evaluation of environmental impacts is limited. This review indicated that environmental impacts, if any, are anticipated to be secondary in nature because environmental effects could result if a currently unrestrained fishery were to be restricted because a recommended ACL changes the conduct of the fishery. Until such time that specific ACL values and AMs are determined for individual fisheries, the environmental impacts of actual specifications would be speculative and not appropriate for a full environmental evaluation. Accordingly, the environmental assessment includes a general discussion of the potential impacts of using ACLs and AMs in the affected fisheries.

1.1 Responsible agencies

The Council was established by the MSA (originally the Fishery Conservation and Management Act, 1976) to develop management plans for U.S. fisheries operating in the U.S. Exclusive Economic Zone (EEZ) around American Samoa, Guam, Hawaii (including Midway Islands), CNMI, and the U.S. Pacific remote island areas (PRIA) which include Palmyra Atoll, Kingman Reef, Jarvis Island, Baker Island, Howland Island, Johnston Atoll, and Wake Island. Once a plan is approved by the Secretary of Commerce, it is implemented through federal regulations, which are enforced by the National Marine Fisheries Service (NMFS) and the U.S. Coast Guard, in cooperation with state, territorial and commonwealth agencies. For further information about the proposed action or about current fishery management in the western Pacific region, contact:

Kitty M. Simonds
Executive Director
Western Pacific Fishery Management Council
1164 Bishop St., Suite 1400
Honolulu, HI 96813
(808) 522-8220

Michael D. Tosatto
Regional Administrator
National Marine Fisheries Service
Pacific Islands Regional Office
1601 Kapiolani Blvd., Suite 1110
Honolulu, HI 96814
(808) 944-2200

1.2 Public Review Process

The development of this ACL amendment has been discussed at each of the following Council meetings:

- 138th Council Meeting held June 19-22, 2007
- 139th Council Meeting held October 9-12, 2007
- 140th Council Meeting held March 10-14, 2008
- 141st Council Meeting held April 14, 2008
- 142nd Council Meeting held June 16-19, 2008
- 143rd Council Meeting held October 15-17, 2008
- 144th Council Meeting held March 24-26, 2009
- 145th Council Meeting held July 22-25, 2009
- 146th Council Meeting held October 20-23, 2009
- 147th Council Meeting held March 21-26, 2010
- 148th Council Meeting held June 29-July 1, 2010
- 149th Council Meeting held October 11-14, 2010

Additionally, this amendment document and EA will be available for public review and comment after publication of a Notice of Availability in the Federal Register.

1.3 List of Preparers

This document was prepared by (in alphabetical order):

Paul Dalzell, Western Pacific Fishery Management Council
Phyllis Ha, NMFS Pacific Islands Regional Office
Tom Jagielo, Contractor for NMFS Pacific Islands Regional Office

Jarad Makaiau, NMFS Pacific Islands Regional Office
Sarah Pautzke, Western Pacific Fishery Management Council
Robert Skillman, Contractor for Western Pacific Fishery Management Council

1.4 Summary of Western Pacific Fishery Ecosystem Plans

Fisheries operating in U.S. EEZ waters of the western Pacific region are governed by one of five fishery ecosystem plans (FEP) developed by the Council and NMFS. The FEPs are archipelagic-based and include the American Samoa Archipelago FEP, the Hawaiian Archipelago FEP, the Mariana Archipelago FEP (which covers EEZ waters around Guam and CNMI), and the PRIA FEP. Additionally, highly migratory pelagic fishery resources such as tunas and billfish play an important role in the biological and socioeconomic environment of the western Pacific region and are managed separately through the Pacific Pelagic FEP. The FEPs, implemented in 2010 (75 FR 2198, January 14, 2010), provide a comprehensive ecosystem approach to fisheries management by managing all fishery resources of a geographic area under a single management framework, and by providing formal mechanisms for coordination and management among federal, state, and local agencies, the fishing industry, local communities, and the general public. The overall goal of the FEPs is to establish a framework under which the Council will improve its abilities to realize the purposes and policies of the MSA through the incorporation of ecosystem science and principles. To achieve this goal, the Council adopted the following ten objectives that apply to each of the FEPs:

Objective 1: To maintain biologically diverse and productive marine ecosystems and foster the long-term sustainable use of marine resources in an ecologically and culturally sensitive manner through the use of a science-based ecosystem approach to resource management.

Objective 2: To provide flexible and adaptive management systems that can rapidly address new scientific information and changes in environmental conditions or human use patterns.

Objective 3: To improve public and government awareness and understanding of the marine environment in order to reduce unsustainable human impacts and foster support for responsible stewardship.

Objective 4: To encourage and provide for the sustained and substantive participation of local communities in the exploration, development, conservation, and management of marine resources.

Objective 5: To minimize fishery bycatch and waste to the extent practicable.

Objective 6: To manage and co-manage protected species, protected habitats, and protected areas.

Objective 7: To promote the safety of human life at sea.

Objective 8: To encourage and support appropriate compliance and enforcement with all applicable local and federal fishery regulations.

Objective 9: To increase collaboration with domestic and foreign regional fishery management and other governmental and non-governmental organizations, communities, and the public at large to successfully manage marine ecosystems.

Objective 10: To improve the quantity and quality of available information to support marine ecosystem management.

To achieve these objectives, the FEPs rely on various fishery management tools appropriate to each particular fishery. A brief summary of each FEP is provided in the sections that follow.

1.4.1 American Samoa Archipelago FEP

Geographic area covered. The American Samoa Archipelago FEP was developed to regulate the harvest of non-pelagic marine resources in the U.S. EEZ around American Samoa (from 3nm to 200nm). The major inhabited islands are Tutuila, Aunuʻu, Ofu, Olosega, and Taʻu. The total land mass of American Samoa is about 200 square kilometers, and it is surrounded by an EEZ of approximately 405,945 square kilometers.

Fisheries managed. The American Samoa Archipelago FEP contains conservation and management measures for fisheries harvesting bottomfish, crustaceans, precious corals, and coral reef ecosystem species (See Appendix 1 for a complete listing of all management unit species). Pelagic species are managed under a separate Pacific Pelagic FEP, described in section 1.4.5 below.

The bottomfish and seamount groundfish fisheries are managed with gear restrictions, provisions for at-sea observer coverage, a framework for regulatory adjustments, and measures to minimize bycatch and bycatch mortality.

Federal permits and logbook reporting are required when fishing for crustacean species managed in the American Samoa EEZ. Gear restrictions, provisions for at-sea observer coverage, and framework procedures to revise management measures are also in place.

For the purposes of deep water precious coral fisheries management, the American Samoa Archipelago is defined as an Exploratory Precious Coral Permit Area. Management measures include seasons and quotas, along with size, gear, and area restrictions. A temporary moratorium on harvest of gold coral is currently in place.

Protection is afforded to coral reef ecosystem fisheries in American Samoa at Rose Atoll, a no-take Marine Protected Area (MPA). Extractive activities are prohibited in the Rose Atoll MPA, except for small harvests related to scientific research and related resource management. Additional management measures specified in the FEP include permit and reporting requirements, gear restrictions, bycatch measures, and a framework process to facilitate adjustments to management measures.

In 2009, the Rose Atoll was also designated as a marine national monument by Presidential Proclamation 8337 (74 FR 1577, January 12, 2009). The monument designation confers additional management and protection to resources of the area. The Council works with NMFS,

the U.S. Fish and Wildlife Service (USFWS), and the American Samoa government to ensure that fisheries management comports with monument requirements.

1.4.2 Hawaii Archipelago FEP

Geographic area covered. The Hawaii Archipelago FEP was developed to regulate the harvest of non-pelagic marine resources in the EEZ around the Hawaiian Islands (3-200 nautical miles offshore).

Fisheries managed. The Hawaii Archipelago FEP contains conservation and management measures for fisheries harvesting bottomfish and seamount groundfish, crustaceans, precious corals and coral reef ecosystems species (See Appendix 1 for a complete listing of all management unit species). Pelagic species are managed under a separate Pacific Pelagic FEP described in section 1.4.5 below.

Bottomfish fisheries in the main Hawaiian Islands (MHI) are managed through a total allowable catch limit (TAC), which is annually determined by the Council and specified by NMFS. In 2009, the Northwest Hawaiian Islands (NWHI) bottomfish fishery effectively ended through a voluntary effort reduction and compensation program following the designation of the area as the Papahanaumokuakea Marine National Monument in 2006 (71 FR 36443, June 26, 2006). Additional management measures for Hawaii Archipelago bottomfish include gear restrictions, provisions for at-sea observer coverage, bycatch management, and a framework process for regulatory adjustments.

The crustacean fisheries management program employs limited access (in NWHI), permit and reporting requirements, season, area, gear and size restrictions, and provisions for at-sea observer coverage, bycatch management, and a framework process for regulatory adjustments.

Hawaii's deep water precious coral fisheries are managed through bank-specific quotas and allow only selective harvesting techniques to be employed. Management measures for precious coral fisheries include: permit and reporting requirements, seasons and quotas, area, size and gear restrictions, bycatch measures, and a framework process for regulatory adjustments. A temporary moratorium on harvest of gold coral is currently in place.

The management program for coral reef ecosystem fisheries includes permit and reporting requirements, gear restrictions, bycatch measures, and a framework process for regulatory adjustments.

The Papahanaumokuakea Marine National Monument designation confers additional protection and management to resources of the NWHI. The Council works with NMFS, USFWS, and the State of Hawaii to ensure that fisheries management comports with monument requirements.

1.4.3 Mariana Archipelago FEP

Geographic area covered. The Mariana Archipelago FEP boundary includes all waters and associated non-pelagic marine resources within the EEZ surrounding CNMI and the Territory of Guam. Guam manages marine resources within waters 0–3 miles from its shoreline; however, in

CNMI, the submerged lands and marine resources from the shoreline to 200 miles are owned by the Federal government and subject to the Mariana Archipelago FEP, unless otherwise specified.

Fisheries managed. The Mariana Archipelago FEP contains conservation and management measures for fisheries harvesting bottomfish and seamount groundfish, crustaceans, precious corals, and coral reef ecosystems species (See Appendix 1 for a complete listing of all management unit species). Pelagic species are managed under the Pacific Pelagic FEP described in section 1.4.5 below.

Management measures for bottomfish include permit and reporting requirements, gear and area restrictions, certain anchoring restrictions, provisions for at-sea observer coverage, a framework for regulatory adjustments, and measures to minimize bycatch and bycatch mortality.

Management measures for crustacean fisheries include: permit and reporting requirements, gear restrictions, provisions for at-sea observer coverage, and framework procedures to modify management measures when needed.

Conservation and management measures for precious coral fisheries include: permit and reporting requirements, seasons and quotas for exploratory areas, area closures, size and gear restrictions, and framework procedures to revise management measures as required. A temporary moratorium on harvest of gold coral is currently in place.

Conservation and management measures for coral reef ecosystem fisheries include: permit and reporting requirements, gear restrictions, certain anchoring restrictions, measures to reduce the potential for bycatch, and a framework procedure to facilitate adjustments to management measures. In CNMI, the management area for the coral reef portion of the Marianas FEP covers the offshore area from 3-200 nm to allow CNMI the same ability to manage their coral reef inshore areas (0-3 nmi) as provided to Guam, American Samoa, and Hawaii.

In 2009, the three northern islands of CNMI and other areas of the EEZ around the Mariana Archipelago were designated as a marine national monument through Presidential Proclamation 8335 (74 FR 1557, January 12, 2009). The monument designation confers additional management and protection to resources of the areas. The Council works with NMFS, USFWS, and the CNMI government to ensure that fisheries management comports with monument requirements.

1.4.4 Pacific Remote Island Areas FEP

Geographic area covered. The PRIA FEP was developed to regulate the harvest of non-pelagic marine resources in the U.S. EEZ around the PRIA through an ecosystem-based approach. The PRIA includes Howland, Baker, Jarvis, and Wake Islands, Kingman Reef, and Johnston and Palmyra Atolls. For the purposes of fisheries management pursuant to the MSA, the PRIA FEP boundaries include all federal waters from the shoreline to 200 nmi surrounding each PRIA and overlay the National Wildlife Refuge boundaries asserted by the USFWS.

Fisheries managed. The PRIA FEP contains conservation and management measures for fisheries harvesting bottomfish, crustaceans, precious corals, and coral reef ecosystems species (See Appendix 1 for a complete listing of all management unit species). Pelagic species are managed under a separate Pacific Pelagic FEP described in section 1.4.5 below.

Management measures for bottomfish fisheries include: permit and reporting requirements, gear restrictions, provisions for at-sea observer coverage, a framework for regulatory adjustments, and measures to minimize bycatch quantity and mortality.

While there are currently no known crustacean fisheries operating in the PRIA, several vessels have been known to fish for crustaceans in federal waters on a small scale. Management measures for crustacean fisheries include: permit and reporting requirements, provisions for at-sea observer coverage, and a framework for regulatory adjustments.

There are no known precious coral beds in the PRIA nor are there known harvests of precious corals in the PRIA at this time. The management program for precious coral fisheries includes permit and reporting requirements, seasons and quotas, size and gear restrictions, a framework for regulatory adjustments, and measures to minimize bycatch and bycatch mortality. A temporary moratorium on harvest of gold coral is currently in place.

The management program for coral reef ecosystem fisheries incorporates two categories of MPAs: 1) no-take, and 2) low-use. From 0-50 fm, Baker Island, Howland Island, Jarvis Island, and Kingman Reef are no-take MPAs; Johnston Atoll, Palmyra Atoll, and Wake Island are low-use MPAs. Additional management measures include: permit and reporting requirements, gear restrictions, bycatch measures, and a framework process to facilitate adjustments to management measures.

In 2009, the Pacific Remote Island Areas (PRIA) were designated as a marine national monument through Presidential Proclamation 8336 (74 FR 1557, January 12, 2009). The monument designation confers additional management and protection to resources of the atolls and islands. The Council works with NMFS and USFWS to ensure that fisheries management comports with monument requirements.

1.4.5 Pacific Pelagic FEP

Geographic area covered. The Pacific Pelagic FEP encompasses all areas of pelagic fishing operations in the U.S. EEZ as well as on the high seas. Although the management area of the Pelagic FEP spatially overlaps with the boundaries of the Council's archipelagic FEPs for demersal fisheries, the Pacific Pelagic FEP specifically manages those resources and habitats associated with the pelagic ecosystem.

Fisheries managed. The Pacific Pelagic FEP contains conservation and management measures for fisheries harvesting highly migratory fish species which include tunas, billfishes, nine pelagic sharks, and other non-demersal fishery resources (See Appendix 1 for a complete listing of all management unit species). At present, pelagic fisheries are sizeable in American Samoa and Hawaii (comprising shallow-set (swordfish) and deep-set (tuna) longline fisheries and troll and handline fisheries), and smaller in scale in CNMI, Guam, and the PRIA.

The Council has taken a series of management actions to conserve pelagic species caught by fisheries in the Western Pacific Region. When the Pelagics FMP was originally implemented in 1986, the use of drift gill nets was banned in U.S. EEZ waters of the Western Pacific Region. Subsequent management measures have included: permit and reporting requirements, mandatory vessel monitoring for domestic longline vessels, area and season limitations, limited entry permit programs, vessel size limits, measures to reduce bycatch quantity and mortality, and recommendations for multilateral internationally coordinated management.

The Council also participates in meetings of regional fishery management organizations (RFMOs) that cover target species relevant to pelagic fisheries, including the Inter-American Tropical Tuna Commission (IATTC) and the Western and Central Pacific Fisheries Commission (WCPFC), which currently set harvest limits for bigeye tuna.

Comprehensive information on the target and non-target stocks, bycatch, protected species, and conservation and management measures for fisheries managed under each FEP can be found in the American Samoa Archipelago FEP (WPFMC 2009a), the Hawaiian Archipelago FEP (WPFMC 2009b), the Mariana Archipelago FEP (WPFMC 2009c), the Pacific Remote Island Areas FEP (WPFMC 2009d), and the Pacific Pelagic FEP (WPFMC 2009e).

2.0 Purpose and Need for Action

National Standard 1 (NS1) of the MSA requires conservation and management measures to prevent overfishing while achieving on a continuing basis, the optimum yield from each fishery for the United States fishing industry. In 2006, Congress amended the MSA to include additional provisions to enhance the ability of NMFS and the Regional Fishery Management Councils (RFMCs) to achieve the objectives of NS1. Specifically, the MSA mandates that each federal fishery of the United States be managed through annual catch limits (ACLs) set at a level such that overfishing does not occur in the fishery, and include measures to ensure accountability for adhering to the catch limits (accountability measures; AMs), unless excepted by NMFS advisory guidelines for NS1 due to management via an international fishery agreement in which the U.S. participates, or the fishery is for a species that has a life cycle of approximately one year. The MSA clarifies that these mechanisms must be established by 2010 for fisheries subject to overfishing, and by 2011 for all other fisheries. On January 16, 2009, NMFS published advisory guidelines under 50 CFR §600.310 (74 FR 3178) to assist RFMCs with implementing the requirements of NS1 of the MSA (see Section 2.2 and Appendix 2).

The purpose of this action is to amend each western Pacific fishery ecosystem plan (FEP) to include a mechanism the Council will use for determining ACLs and AMs. This action is necessary to comply with the MSA requirement for ACLs and AMs in a manner that is consistent with NMFS advisory guidelines for NS1.

2.1 Proposed Action

There are three major components to the proposed action. The first component would amend all five western Pacific FEPs to include a mechanism to develop ACLs and AMs for each fishery resource that requires them by the year 2011. Specifically, this mechanism would authorize the use of:

- A tier of control rules the Council's Science and Statistical Committee (SSC) will use to calculate an acceptable biological catch (ABC) for each fishery resource. The ABC will account for scientific uncertainty in the estimate of the overfishing limit (OFL) for the resource, and includes consideration of the probability or risk that catch equal to the ABC would exceed the OFL and result in of overfishing;
- A qualitative method for determining the acceptable probability or risk that a catch equal to the ABC would result in overfishing;
- ACLs for stocks/stock complexes in a fishery set at or below their respective ABC level; and
- A suite of accountability measures (AM) to prevent ACLs from being exceeded or to mitigate overages of an ACL if they occur, including use of annual catch targets (ACTs).

The second component of the federal action would amend the FEPs to include, for future use, an ecosystem component (EC) species classification consistent with the criteria set forth in NS1 guidelines. Species classified as EC species are not required to have annual catch limits, but will remain in the FEP for ecosystem considerations and data collection purposes.

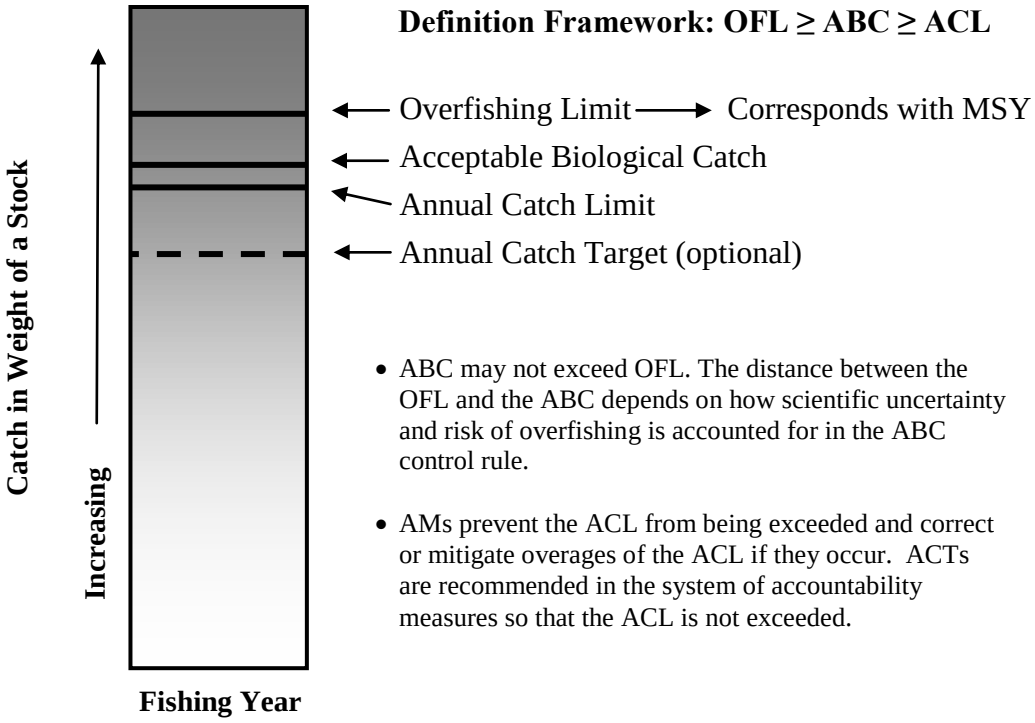
The third component of the federal action would amend the Pacific Pelagic FEP to identify the species that are subject to management under an international fishery agreement or have an annual life cycle. Under the MSA, species that meet either of these two criteria may be excepted from ACL and AM requirements.

The proposed action does not specify any ACL or implement a specific AM for any western Pacific fishery, and would not classify any EC species at this time. Therefore, the proposed action would not modify vessel operations or other aspects of any fishery. If approved by NMFS, the Council will use the established process to determine ACLs and AMs for each fishery that require them starting in fishing year 2011, and every fishing year thereafter. Future EC classifications would require an amendment to the applicable FEP.

2.2 Background on National Standard 1

The MSA requires the Council and NMFS to ensure long-term fishery sustainability by ending and preventing overfishing, and by rebuilding overfished stocks. In developing the national advisory guidelines for complying with NS1, NMFS established an operational framework to explain the relationship between OFL, ABC, ACL, and ACT as they relate to maximum sustainable yield (MSY) and overfishing. Figure 1 illustrates the concepts and terminology discussed in this section.

Figure 1. Relationship between OFL, ABC, ACL, and ACT.



2.2.1 Maximum Sustainable Yield, Overfishing Limit, and Status Determination Criteria

Maximum sustainable yield (MSY) is the maximum catch that can be harvested from a fishery on a continuing basis under prevailing conditions. If a stock or stock complex in a fishery is harvested on a continuing basis at MSY (F_{MSY}), its abundance will approach a long-term average biomass (B_{MSY}), at which it will fluctuate. MSY, F_{MSY} and B_{MSY} should be estimated for each stock based on the best scientific information available; however when such information is not available, these values should be estimated using proxies, to the extent possible.

Corresponding to the notions of MSY, F_{MSY} and B_{MSY}, three concrete operating reference points can be set: (1) maximum fishing mortality threshold (MFMT); (2) minimum stock size threshold (MSST); and (3) overfishing limit (OFL). These concrete reference points may actually differ from their notional counterparts because MSY, F_{MSY} and B_{MSY} may be poorly known; therefore, MFMT, MSST and OFL may be purposefully adjusted away from the notional counterparts for precautionary reasons. The concrete reference points of MFMT, MSST, and OFL are used to determine the status of a stock or stock complex. NMFS terms these reference points as status determination criteria (SDC). Overfishing occurs whenever fishing mortality is greater than MFMT or the annual catch is greater than OFL. A stock or stock complex is considered overfished when its biomass falls below MSST.

With respect to overfishing, NS1 requires each FEP to describe which of the two methods, MFMT or OFL, will be used to determined the overfishing status of a stock or stock complex. Currently, each western Pacific FEP utilizes MFMT as the SDC for overfishing and MSST for an overfished determination. Estimating MSY and setting the corresponding OFL is the responsibility of NMFS, as is determining the overfishing or overfished status of a stock or stock complex.

2.2.2 Acceptable Biological Catch

Because MSY and OFL are estimates, there is an inherent level of uncertainty in the accuracy of these estimates due to scientific uncertainty in the information that is used in their calculation. Therefore, NS1 requires that an acceptable biological catch (ABC) limit be established at or below the OFL through the use of an ABC control rule to account for this uncertainty. Additionally, given the inherent uncertainty in the estimates in OFL, there is a probability (P) that the value set for ABC may exceed the true (but not precisely known) value of OFL, thus catch at ABC could actually result in overfishing. Therefore, when possible, ABC should be set such that P is less than some acceptable risk of overfishing (P*), as determined by the Council. While the ABC is allowed to equal OFL, in most cases ABC will be set lower than OFL to decrease the probability that overfishing might occur in a year (Figure 2). According to NS1 guidelines, the probability that overfishing will occur cannot exceed 50 percent and should be a lower value. NS1 clarifies that it is the responsibility of the SSC to recommend the ABC to the Council. The SSC may recommend an ABC that differs from the result of the ABC control rule calculation (e.g., based on factors such as data uncertainty, recruitment variability, variability in prevailing conditions including fishery selectivity, and declining trends in population variables etc.), but must provide an explanation for its ABC recommendation.

2.2.3 Annual Catch Limits, Annual Catch Targets, and Accountability Measures

Once the OFL and ABC for a stock or stock complex are provided to the Council, it is the responsibility of the Council to determine the ACL. NS1 clarifies that the ACL may not exceed the ABC and may be set annually or on a multi-year basis. Under the NS1 guidelines, the ACL is purposely set at or below the ABC to further reduce the likelihood that annual catch equal to the ACL will exceed the ABC and OFL, and thus result in overfishing. The guidelines allow the Council to divide an ACL for a fishery into sector-ACLs. Examples of sectors include the commercial sector and recreational sector, or various gear groups within a fishery.

The ACL is also the level of annual catch of a stock or stock complex that serves as the basis for invoking AMs. AMs are management controls to prevent ACLs from being exceeded and to correct or mitigate overages of the ACL if they occur. AMs should address and minimize both the frequency and magnitude of overages, and correct the problems that caused the overage in as short a time as possible. Two categories of AMs are: 1) in-season AMs and 2) AMs for situations where the ACL is exceeded.

In-season AMs

Whenever possible, FMPs should include in-season monitoring and management measures to prevent catch from exceeding ACLs. In-season AMs could include, but are not limited to: 1) an ACT, 2) the closure of a fishery, 3) the closure of specific areas, 4) changes in gear, 5) changes in trip size or bag limits, 6) reductions in effort, or 7) other appropriate management controls for the fishery. If final catch data are delayed, Councils should make appropriate use of preliminary data in implementing in-season AMs. Provisions for in-season fishery closure authority should be described for situations where it is evident that an ACL has been exceeded or is projected to be reached, and that closure of the fishery is necessary to prevent overfishing. For fisheries without in-season management controls to prevent the ACL from being exceeded, AMs should utilize ACTs that are set below ACLs so that catches do not exceed the ACL.

An ACT is an amount of annual catch of a stock or stock complex that is the management target of the fishery, and accounts for management uncertainty in controlling the actual catch to an amount that is at or below the ACL. Management uncertainty may include late catch reporting, misreporting, and underreporting of catches by fishery participants. The uncertainty is also affected by the ability of fishery managers to control the actual catch of a fishery. For example, a fishery that has in-season catch data available and in-season closure authority has better management control and precision than a fishery that does not have these features. Though not required by the NS1 guidelines, ACTs are recommended in the system of accountability measures to help ensure an ACL is not exceeded. If an ACT is specified as part of the AMs for a fishery, an ACT control rule should be utilized for setting the ACT.

AMs for situations where the ACL is exceeded

On an annual basis, the Council must determine as soon as possible after the fishing year if an ACL was exceeded. If an ACL was exceeded, AMs must be triggered as soon as possible to correct the operational issue that caused the ACL overage, as well as remedy any biological consequences resulting from the overage. These AMs could include, among other things, modifications of in-season AMs or overage adjustments. If catch exceeds the ACL for a given

stock or stock complex more than once over a 4-year period, the system of ACLs and AMs should be re-evaluated and modified, if necessary, to improve its performance and effectiveness. A Council could choose a higher performance standard (e.g., a stock's catch should not exceed its ACL more often than once every five or six years) for a stock that is particularly vulnerable to the effects of overfishing if the vulnerability of the stock has not already been accounted for in the ABC control rule.

AMs based on multi-year average data

Some fisheries have highly variable annual catches and lack reliable in-season or annual data on which to base AMs. If there are insufficient data upon which to compare catch to ACL, either in-season or on an annual basis, AMs could be based on comparisons of average catch to average ACL over a three-year moving average period (or another appropriate multi-year period, if supported by analysis). Councils should explain why basing AMs on a multi-year period is appropriate. Evaluation of the moving average catch to the average ACL must be conducted annually and AMs should be triggered if the average catch exceeds the average ACL. As a performance standard, if the average catch exceeds the average ACL for a stock or stock complex more than once in a four year period, the NS1 guidelines recommend the system of ACLs and AMs be re-evaluated and modified to improve the performance and effectiveness of the ACL and AM measures.

AMs for State-Federal fisheries

For stocks or stock complexes that have harvest in state or territorial waters, FMPs and FMP amendments must, at a minimum, have AMs for the portion of the fishery under Federal authority. Such AMs could include closing the EEZ when the Federal portion of the ACL is reached, or the overall stock's ACL is reached, or other measures.

2.2.4 Stocks Excepted from Annual Catch Limits and Accountability Measures

The MSA states that the ACL and AM requirements shall not apply to a fishery for species that have a life cycle of approximately 1 year unless the Secretary has determined the fishery is subject to overfishing. NS1 guidelines clarify that this exemption applies to a species for which the average length of time it takes for an individual to produce a reproductively active offspring is approximately 1 year and that the individual has only one breeding season in its lifetime. While exempt from the ACL and AM requirements, FEPs or FEP amendments for these stocks must have SDC, MSY, optimum yield (OY), ABC, and an ABC control rule. Additionally, the MSA provides an exception to the ACL requirement for stocks or stock complexes subject to management under an international agreement, which is defined as any bilateral or multilateral treaty, convention, or agreement that relates to fishing and to which the United States is a party. These excepted stocks still must have SDC and MSY specified.

3.0 Description of the Alternatives

This section describes the alternatives considered to implement the three major components to the proposed action described in Section 2.1.

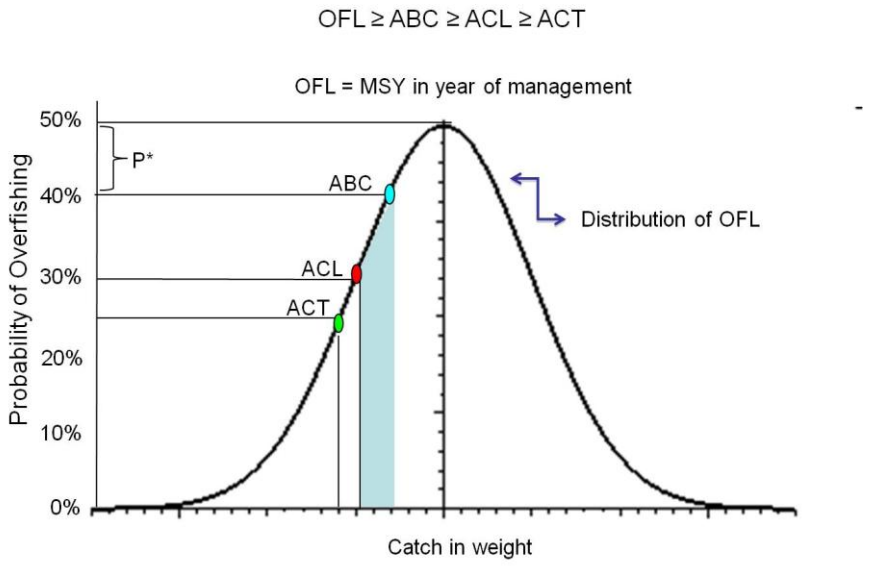
3.1 Action 1: Mechanism for Specifying ACLs, including ABCs and AMs

There are three required elements in the mechanism for specifying ACLs. The first requires the calculation of an ABC that is set at or below the OFL. The ABC is determined by the SSC using an ABC control rule developed by the Council. The ABC control rule accounts for scientific uncertainty in the estimate of the OFL and when possible, an acceptable level of risk (as determined by the Council) that catch equal to the ABC could actually exceed the OFL and result in overfishing. NS1 guidelines clarify that the acceptable risk of overfishing, or P*, cannot exceed 50% and should be a lower value. If P* is considered, the Council must inform the SSC of the acceptable P* value which the SSC must apply in the ABC control rule to calculate the ABC that is recommended to the Council.

The second element requires the Council to determine an ACL that may not exceed the SSC-recommended ABC. An ACL set below its ABC further reduces the probability that actual catch will exceed the OFL and result in overfishing. NS1 guidelines do not mandate any specific approach or method for determining an ACL.

The third and final element in the ACL mechanism is the inclusion of AMs. AMs must be included in the ACL mechanism to prevent ACLs from being exceeded, and to correct or mitigate overages of ACLs if they occur. NS1 guidelines provide that annual catch targets (ACT) may be used in the system of AMs so that an ACL is not exceeded. The relationship between ABC, ACL and ACT are shown in relation to the probabilities of exceeding the OFL in Figure 2.

Figure 2. Relationship of the expected values of the long-term average MSY, OFL, ABC, ACL and ACT.



The OFL in Figure 2 is normally distributed for illustration, whereas in reality the distribution could be skewed, flatter, or more peaked. The percentages and corresponding ABC, ACL, and ACT presented on the graph are provided as an example and do not represent the values for any particular stock. It must also be noted that the probability of overfishing is only accounted for at the ABC step. ACL and ACT (which account for management uncertainty) are included on this distribution curve only to illustrate how the use of an ACL and ACT further decreases the probability that actual catch will exceed the OFL.

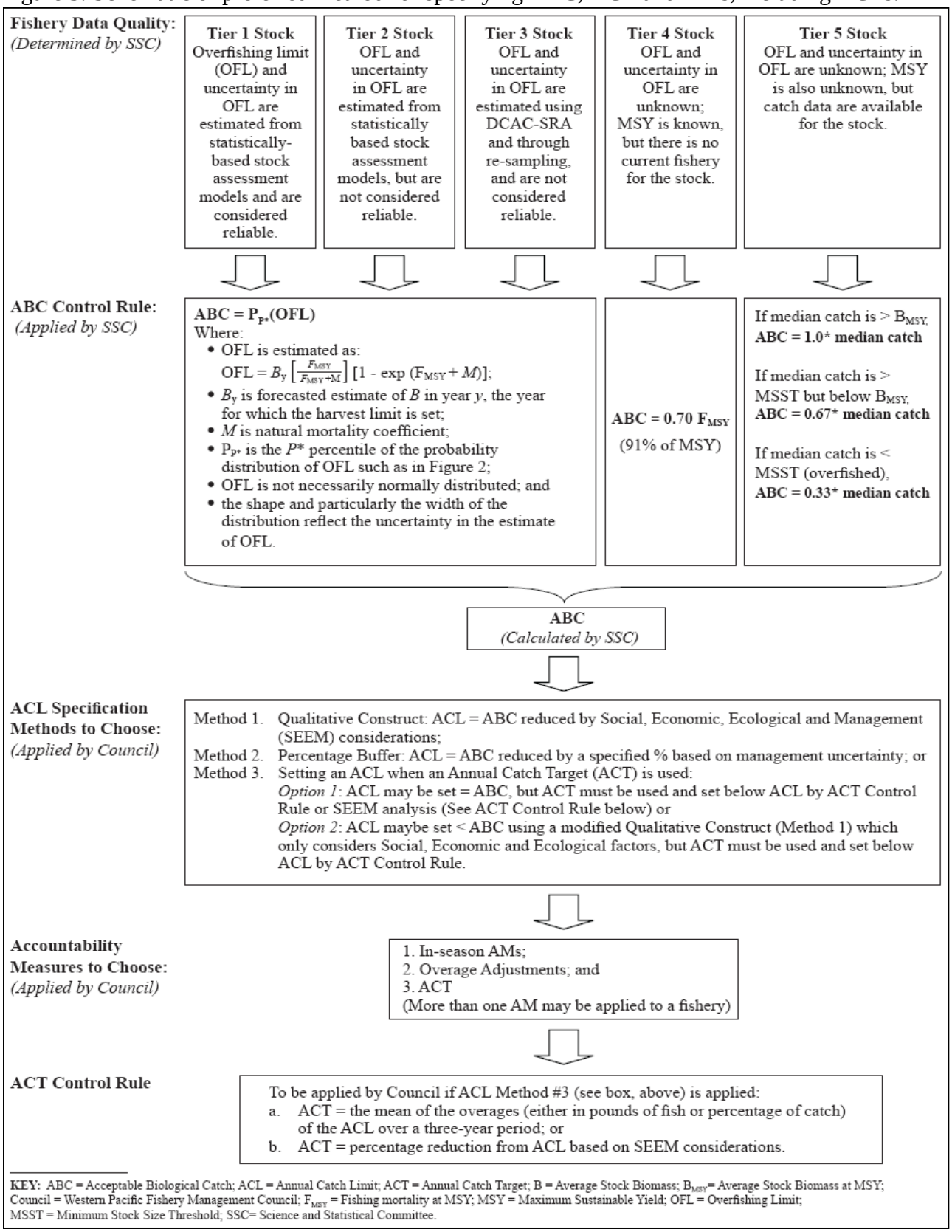
Alternative 1: No Action

Under this alternative, no western Pacific FEP would be amended and there would not be any mechanism developed for specifying ACLs, nor would methods be developed for calculating ABCs or setting ACLs and AMs for western Pacific fisheries.

Alternative 2: Establish a Mechanism for Specifying ACLs, including ABCs and AMs *(preferred)*

Under the preferred alternative, a mechanism for specifying ACLs would be established in the FEPs for American Samoa, Hawaii, the Mariana Archipelago, the Pacific Remote Island Areas, and western Pacific Pelagic fisheries. The ACL mechanism would include a tiered system of ABC control rules that the SSC will apply to calculate ABC. Included in this is a qualitative method the Council will employ to determine an appropriate P* value for each fishery. The ACL mechanism also includes methods for determining ACLs and AMs for stocks and stock complexes in the fishery. If approved by NMFS, ACLs and AMs developed by the Council will be specified by the agency prior to the start of each fishing year. Figure 3 illustrates the preferred method for specifying ACLs, including the procedures for calculating ABC and setting ACL and AMs that are all described in this section.

Figure 3. Schematic of preferred method for specifying ABC, ACL and AMs, including ACTs.



KEY: ABC = Acceptable Biological Catch; ACL = Annual Catch Limit; ACT = Annual Catch Target; B = Average Stock Biomass; B_{MSY}= Average Stock Biomass at MSY; Council = Western Pacific Fishery Management Council; F_{MSY} = Fishing mortality at MSY; MSY = Maximum Sustainable Yield; OFL = Overfishing Limit; MSST = Minimum Stock Size Threshold; SSC= Science and Statistical Committee.

3.1.1 Calculation of the Acceptable Biological Catch

This section describes how the ABC will be calculated and set compared to the OFL using ABC control rules that account for the level of scientific knowledge about the stock or stock complex, scientific uncertainty in the estimate of OFL, and other scientific information. This section also discusses how the acceptable risk of overfishing (P*) is factored into the ABC control rule and how P* is determined.

3.1.1.1 Tiered System of ABC Control Rules

Under the preferred alternative, for stocks and stock complexes required to have an ABC, the Council will utilize a five-tiered system of ABC control rules that allows for different levels of scientific information to be considered when calculating ABC. The control rules are organized from data rich down to data poor, with Tier 1 being the highest (data rich) and Tier 5 being the lowest (data poor). Tiers 1-2 involve data rich to data moderate situations and include levels of uncertainty derived from model-based stock assessments. Tiers 3-5 involve data poor situations and include levels of uncertainty derived from ad-hoc procedures including simulation models or expert opinion.

When calculating an ABC for a stock or stock complex, the SSC must first evaluate the information available for the stock and assign the stock or stock complex into one of the five tiers. The SSC must then apply the control rule assigned to that tier to determine the ABC. The SSC may recommend an ABC that differs from the result of the control rule calculation based on factors such as data uncertainty, recruitment variability, declining trends in population variables, and other factors determined relevant by the SSC, but must explain their rationale. The tiered system of ABC control rules are described below.

Tier 1. Model-Based Probabilistic Approach to Estimating ABCs

In this tier, the data used are reliable and complete enough to be able to utilize statistical-based stock assessment models (e.g., Stock Synthesis 2 (or 3), Multifan-CL (MFCL), C++ Algorithmic Stock Assessment Laboratory (CASAL), and Bayesian production models). From these stock assessments, reliable estimates of MSY, F_{MSY}, B_{MSY}, and B_t are available. Of special relevance to being included in this tier, measures of the uncertainty of F_{MSY}, B_t and B_{t+k} and OFL_{t+k} must be available directly.

In plain English:

> ABC is the maximum value for which the probability "p" of exceeding OFL is less than P*.

Or, in conceptual mathematical terms:

> ABC = max (x | p(x > OFL) < P*)

Or, as commonly estimated:

> ABC = P_{P*}(OFL)
>
> Where:
>
> - OFL is estimated as $\mathrm{OFL} = B_y \left[\frac{F_{\mathrm{MSY}}}{F_{\mathrm{MSY}}+M}\right][1 - \exp(F_{\mathrm{MSY}} + M)]$;
> - B_y is forecasted estimate of B in year y, the year for which the harvest limit is set;
> - M is natural mortality coefficient;

- P_{P^*} is the P* percentile of the probability distribution of OFL such as in Figure 2;
- OFL is not necessarily normally distributed; and
- the shape and particularly the width of the distribution reflect the uncertainty in the estimate of OFL.

The Council must advise the SSC on the acceptable P* (see section 3.1.1.2 for a discussion on determining P*) to use prior to calculating and recommending the ABC. If the SSC determines that the uncertainty of OFL is underestimated (due to underestimating the uncertainty of F_{MSY} and/or the forecasted estimated B_t), the SSC could appropriately rescale the width of the OFL distribution.

Tier 2. Quasi-Probabilistic Approach to Estimating ABCs

The key difference between assessments in Tier 1 and Tier 2 is that in Tier 2, measures of uncertainty of OFL are not as reliable or are not available from a single, integrated stock assessment model. Reliable data must still be available to be in included in this tier, but those used are obtained through some separate analysis or analyses. The methods often involve re-sampling or ad hoc methods. While the statistical-based model characteristic of Tier 1 can occur here, the common assessments are Yield-per-Recruit (Y/R) and Spawning-per-Recruit (SPR). Such assessments involve the use of F_{MSY} proxies, usually $F_{30\%}$ and $F_{60\%}$. The data in Tier 2 may not be as reliable or complete as in Tier 1, though still of sufficient quality to provide fully usable stock assessments.

$F_{30\%}$ = Fishing at the rate that reduces spawning biomass per recruit to 30% of the unfished value. Used as a substitute for F_{MSY} when using Y/R and SPR stock assessments. $F_{60\%}$, as well as others, has also commonly been used.

ABC is estimated using the equation in Tier 1 above, with the uncertainty estimates coming from re-sampling (i.e. method for estimating and re-estimating probability distributions such as bootstrapping). The Council must advise the SSC on the acceptable P* (see section 3.1.1.2 for a discussion on determining P*) to use prior to calculating and recommending the ABC.

Tier 3. Data-poor Probabilistic Approach to Setting ABCs

In this tier, the available data are not sufficient for the use of model-based assessment tools. Data are sufficient to apply the Depletion-Corrected Average Catch – Stock Reduction Analysis (DCAC-SRA) (McCall 2009) with information on the biology of the stock, or DCAC, in which there is some estimate of natural mortality (M), but other life history information is lacking. In these circumstances, the uncertainty of OFL (the probability distribution of OFL) can be estimated using the Monte Carlo simulation (i.e. a technique that uses algorithms that rely on repeated random sampling to compute results) . These tools are to be applied to long-lived species where the natural mortality coefficient M should be less than 0.20 and recruitment should not be highly episodic.

ABC is estimated using the equation in Tier 1 above, with the uncertainty estimates established by the Monte Carlo simulation. Again, the Council must advise the SSC on the acceptable P* (see section 3.1.1.2 for a discussion on determining P*) to use prior to calculating and recommending the ABC.

Tier 4. ABC Control Rule for Species without Current Harvest
This ABC control rule is for species or species assemblages with stock assessments and/or MSY estimates, but no current harvest, such as deepwater shrimp (*Heterocarpus*). The ABC is set at 0.70 F_{MSY} (= yield 91% OFL = 91% MSY = ABC; see Walters et al. 2005) as a precautionary measure to maximize yield while minimizing biomass impacts and accounting for scientific uncertainty. An alternative target fishing mortality value may be specified if additional data or modeling is available to support it, or the Council chooses to be more precautionary.

Walters et al. (2005) provided an example through the modeling tool, ECOSIM, in which k = 0.7 represents a precautionary factor in setting the target fishing mortality (F_{MSY}), which is predicted to have little impact on yield. When k = 0.7, the ECOSIM simulations implied a sustainable yield of around 0.9 MSY. "k" is a factor that a fishery modeler can vary to represent varying levels of precaution for F_{MSY} within the ECOSIM model. Similarly, NMFS Technical Guidance on implementing NS1 by Restrepo et al. (1998) recommended a default fishing mortality target of 25% below MFMT, or 0.75 F_{MSY}, which results in an equilibrium yield of 94% MSY or higher. This Tier 4 control rule adopted by the WPFMC is more precautionary than the control rule recommended by Restrepo et al. (1998) and in line with the results of Walters et al. (2005). As Tier 4 involves a fishery with no current harvest, this ABC control rule does not include consideration of P*; however if harvest occurs, the fishery may be moved into higher tier where P* would be need to be considered.

Tier 5. Data-poor Ad-hoc Approach to Setting ABCs
In this tier, catches may be small and/or the catch history may contain gaps or be too variable. Catch history may also be lacking in consistently stable periods or periods with consistent trends for using DCAC-SRA or DCAC. Hence, there is no basis for estimating a reliable MSY or OFL.

For these data poor fisheries, a multiplier of the long-term median catch history will be used. The multiplier will be determined by the biological knowledge of the stock or stock complex, in light of the guidance provided by Restrepo et al. *(Section 2.2.2: Data Poor Situations*). The guidance recommends that the default control rule be implemented by multiplying the average catch from a time period where there is no quantitative or qualitative evidence of declining abundance ("Recent Catch") by a factor based on a qualitative estimate of relative stock size. The following guidelines were provided:

Above B_{MSY}	Limit catch = 1.00*Recent Catch
Above MSST but below B_{MSY}	Limit catch = 0.67*Recent Catch
Below MSST (i.e. overfished)	Limit catch = 0.33*Recent Catch

However, Restrepo et al. (1998) advises that because it will probably not be possible to analytically determine stock status relative to B_{MSY} for data poor stocks, an approach based on informed judgment will be necessary. The authors further state (*Section 3.3.1: Data Poor Defaults*) that "in cases of severe data limitations, qualitative approaches may be necessary, including expert opinion and consensus-building methods." As Tier 5 involves data poor situations, this ABC control rule does not include consideration of P*.

3.1.1.2 Determining the Acceptable Probability of Overfishing used in the ABC Control Rule

The ABC control rule for Tier 1-3 fisheries requires the Council to advise the SSC on the acceptable probability of overfishing (P*) in order for the SSC to calculate and recommend the ABC. As discussed above, P* refers to the acceptable probability or risk that actual catch equal to the ABC would exceed the OFL and thus, result in overfishing. NS1 guidelines require that the probability that overfishing will occur cannot exceed 50% and should be a lower value. Consequently, the Council adopted a maximum P* value of 50%; however, under the preferred alternative, where adequate scientific information is available on the stock or stock complex, the Council will utilize a qualitative method for determining an appropriate P* that is lower than the maximum of 50%. This qualitative approach is described below.

Qualitative Analysis for Determining P*

The Council developed a process by which the risk of overfishing can be reduced from the 50% maximum P*. This approach, based on the approach developed by the South Atlantic FMC, is a qualitative method of determining P* that considers the amount of information available on the stock or stock complex, including scientific uncertainty, for the following dimensions: 1) assessment information, 2) assessment uncertainty, 3) stock status, and 4) productivity and susceptibility. Information on the four dimensions will be complied and analyzed by a team that may include Council and SSC members, Council staff, and other individuals knowledgeable in the fishery, including stock assessment experts. Team members will use their knowledge and expertise to assign a single score for each dimension based on the criteria below. The maximum value for each dimension is 12.5 and the sum of the four dimensions has a maximum value of 50. The scores for each dimension will be added together for a final score, then be reduced from the maximum risk of overfishing (P^*_{MAX}) of 50. The team's analysis will be vetted through the Council process with the Council ultimately deciding the final P* value. The Council-approved P* would then be utilized in the calculation of the recommended ABC. An example of the qualitative analysis is provided below, but the exact criteria and scoring values used may change as deemed appropriate by the team for each assessed stock.

1) Assessment Information

Criteria	Score	
Quantitative assessment provides estimates of exploitation and B; includes MSY-derived benchmarks	0.0	
Reliable measures of exploitation or B, no MSY benchmarks, proxy reference points	2.5	X
Relative measures of exploitation or B, absolute measures of stock unavailable, proxy reference points	5.0	
Reliable catch history	7.5	
Scarce or unreliable catch records	12.5	

2) Assessment Uncertainty

Criteria	Score	
Complete. Key determinant – uncertainty in both assessment inputs and environmental conditions included	0.0	
High. Key determinant – reflects more than just uncertainty in future recruitment	2.5	
Medium. Uncertainties are addressed using statistical techniques and sensitivities, but full uncertainty is not carried forward in projections	5.0	X
Low. Distributions of F_{MSY} and MSY are lacking	7.5	
None. Only single point estimates; no sensitivities or uncertainty evaluations	12.5	

3) Stock Status

Criteria	Score	
Neither overfished nor overfishing. Stock is at high B and low exploitation relative to benchmark values	0.0	
Neither overfished nor overfishing. Stock may be in close proximity to benchmark values	2.5	X
Stock is either overfished or overfishing is occurring	5.0	
Stock is overfished and overfishing is occuring	7.5	
Either status criterion is unknown	12.5	

4) Productivity and Susceptibility

Criteria	Score	
Low risk. High productivity, low vulnerability, low susceptibility	0.0	
Medium risk. Moderate productivity, vulnerability, and susceptibility	5.0	X
High risk. Low productivity, high vulnerability, high susceptibility	12.5	

SCORE SUMMARY

Dimensions	Score
Assessment information	2.5
Assessment uncertainty	5.0
Stock status	2.5
PSA	5.0
Total Score	**15.0**
Risk of overfishing: **(P*=50 minus Total Score, where 50 equals P^*_{MAX})**	**35**

In the example above, the resulting P* of 35 could then be used in the ABC control rule equations available for stocks in any of the tiers 1 through 3, presented in section 3.1.1.1. Benefits of this alternative include the following: 1) it brings together multiple experts to

determine the risk of overfishing based on their diverse knowledge; 2) it can be applied in both data rich and data poor situations, i.e. whether formal stock assessments can be conducted or not; and 3) it need not be repeated annually unless information suggests that circumstances have changed significantly.

Other Options Considered but Rejected for Determining P*

Two other methods for determining P* were discussed but ultimately rejected by the SSC and Council, including a graphical approach that plots B/B_{MSY} ratios against the probability of overfishing, and a tabular approach using catch from which the Council could see the resulting ABCs and the associated levels of risk. These two approaches were not agreed upon because they are more appropriate for tier 1 situations and possibly tier 2, but data quality may call into question the results in the 3rd tier.

3.1.2 Setting the Annual Catch Limit

NS1 guidelines require the Council to determine an ACL that may not exceed the SSC-recommended ABC; however, NS1 does not provide guidance on how to set an ACL below the SSC-recommended ABC. This section describes the methods the Council will use to set ACLs starting in 2011.

Under the preferred alternative, ACL will be set by the Council after considering the ABC provided by the SSC, as well as social and economic factors, pertinent ecological considerations, and management uncertainty. Management uncertainty stems from insufficient information about true catch (e.g. late reporting, underreporting and misreporting of landings), lack of management precision, and/or the ability to close a fishery before a catch limit is exceeded. NS1 guidelines suggest management uncertainty be accounted for during the establishment of AMs for a fishery, including ACTs; however, nothing precludes the Council from accounting for management uncertainty at the ACL step.

Method 1: Qualitative Construct for Setting an ACL

The ACL qualitative construct uses an approach similar to the P* qualitative construct outlined in Section 3.1.1.2. While the P* qualitative construct considers the amount of biological information (scientific uncertainty) available on the stock or stock complex, the ACL qualitative construct considers the amount of socio-economic information (management uncertainty) on the fishery that targets the stock or stock complex. Specifically, the dimensions that will be used for the ACL qualitative construct would include the following factors: 1) Social; 2) Economic; 3) Ecological; and 4) Management uncertainty (SEEM). Aspects of the SEEM dimensions could include the importance of the fishery both socially and economically; consideration of the ecological importance of the stock or stock complex targeted by the fishery (e.g., is the stock a key indicator species of ecological health of the ocean), and whether managers can effectively constrain catch to planned levels.

Information on the SEEM dimensions will be compiled and analyzed by a team that may include Council and SSC members, Council staff, and other individuals knowledgeable in the fishery. This team will also be responsible for developing the criteria and scoring values regarding the quality and completeness of the information for each dimension. Like the P* qualitative construct, the scores for each dimension will be added together so that the total score is

subtracted from a default value of 100% ABC (i.e., 100). Because SEEM analyses will be unique for each fishery, there are no specifics given at this time for the criteria or scoring values within the dimensions.

Method 2: Percentage Buffer for Setting an ACL

Under this method, the ACL would be set as a percentage of the ABC (e.g., ACL = 10% to 100% of the ABC) with the actual percentage dependent upon the amount of management uncertainty that exists in the fishery. For example, if management uncertainty is low, the ACL would be set close to 100% of the ABC. Alternatively, if management uncertainty is high, ACL would be set as a lower percentage. Factors that the Council will consider when selecting the percentage include late reporting, underreporting, and misreporting of landings in the fishery, as these factors contribute to the possibility that the true catch may actually exceed the ABC and ultimately the OFL of a fishery, thus resulting in overfishing. The justification for using this method over method 1 would need to be clearly identified by the Council when setting the ACL, as it is not a quantitative decision. However, it is useful to note that the ACL is a management decision for the Council to make, not necessarily a numerically-derived limit.

Method 3: Setting an ACL when an ACT will be Utilized

An ACT is an amount of annual catch of a stock or stock complex that is the management target of the fishery, and accounts for management uncertainty in controlling the actual catch at or below the ACL. When an ACT is used, it should be set lower than the ACL with a large enough buffer between the two reference points such that risk of exceeding the ACL is low. NS1 guidelines recommend ACTs in the system of accountability measures so that ACL is not exceeded. See Section 3.1.3 for a description of setting the ACT.

If the Council decides to use an ACT as a means to ensure an ACL is not exceeded, there are two options the Council may use in setting an ACL. Under the first option, the Council could simply set the ACL equal to the ABC. If this option is taken, management uncertainty will be accounted for at the ACT level using the ACT control rule described in Section 3.1.3. Under this option, in addition to management uncertainty, the Council could also consider social, economic and ecological factors to set the ACT and thus could apply the entire SEEM analysis described under Method 1 to set the ACT below the ACL. While NS1 guidelines do not require social, economic or ecological factors to be considered in setting the ACT, nothing precludes the Council from doing so, although the resulting ACT would be more precautionary than NS1 intends.

Under the second option, the Council would set the ACL less than the ABC using a modified Method 1 (Qualitative construct for setting ACLs) described above whereby the analysis for setting the ACL will only consider sociological, economic, and/or ecological factors. Under this option, management uncertainty will be accounted for at the ACT level using the ACT control rule (3-year running average) described in Section 3.1.3.

As a performance measure for all ACL managed fisheries, if landings exceed the ACL for any stock or stock complex more than once in a four year period, the Council will re-evaluate the system of ACLs and AMs for the fishery and modify the system as necessary to improve its performance and effectiveness.

3.1.3 Suite of Accountability Measures

In addition to ACLs, the MSA also requires NMFS and the Councils to implement AMs (MSA §303(a)(15)). NS1 guidelines (74 FR 3178; January 16, 2009) explain that AMs are management controls to prevent ACLs from being exceeded and to correct or mitigate overages of the ACLs if they occur. The guidelines recommend FMPs describe AMs and how those measures are triggered. NS1 guidelines also suggest that management uncertainty be accounted for in establishing the AMs for a fishery, including uncertainty in the ability of managers to constrain catch and uncertainty in quantifying the true catch amounts. Since the purpose of ACLs and other harvest controls is to prevent overfishing, AMs are triggered at the ACL level to ensure the ABC and OFL are not exceeded and overfishing does not occur.

Under the preferred alternative, in fisheries for which in-season monitoring of catch is possible (i.e. fisheries with federal logbook reporting and State of Hawaii commercial fisheries, including MHI bottomfish), tracking of catch landings towards the ACL would be initiated at the start of each fishing year. When the ACL is projected to be reached, the commercial and non-commercial fishery sectors will be closed in federal waters for the remainder of the fishing year. For fisheries that rely on non-federal creel survey programs conducted by local marine resource management agencies, in-season tracking of catch landings may not be fully possible because availability of catch data is dependent upon local agencies workload and priorities. For these fisheries, the Council may employ overage adjustments as an accountability measure. If the Council determines at the end of a fishing year that total catch has exceeded the specified ACL for any fishery, the Council may reduce the ACL for the subsequent fishing year by the percentage or absolute value of the overage. However, one crucial aspect of this is that overages are typically factored into the subsequent year's stock assessment, as are any underages. For this reason, the Council will need to decide whether to include an overage adjustment if the overage has already been considered in a stock assessment, although stock assessments are typically not performed annually. However, as a performance measure for all ACL managed fisheries, if landings exceed the ACL for any stock or stock complex more than once in a four year period, the Council will re-evaluate the system of ACLs and AMs for the fishery and may modify the system as necessary to improve its performance and effectiveness.

As explained in Section 3.1.2 in Method 3, ACTs may also be utilized as an accountability measure to ensure a fishery does not exceed its ACL. Under the preferred alternative, the Council has recommended two approaches for setting an ACT for western Pacific fisheries.

The first approach utilizes an ACT control rule based on a 3-year running average of overages of a specified catch limit (e.g. TAC, quota, ACL, or ACT). The percentage or absolute value of the overage of a catch limit over a three year period will be reduced from the ACL in the following year. With this approach, if an ACL is not exceeded, a zero (0) percentage or absolute value will be attributed for that year. For example, assuming a static ACL of 100,000 pounds has been set annually for three consecutive years, and total catch exceeded the ACL in year 1 by 2,000 pounds (or 2%), year 2 by 6000 pounds (6%), and in the third year was 3000 pounds short (or 97,000 pounds), the ACT reduction would be calculated as a percentage as follows (2% + 6% + 0%)÷3 = 2.67%. In this example, ACT will be reduced by 2.67% (or 2,667 pounds) from the next 100,000 ACL, resulting in an ACT of 97,330 pounds in that following year.

Alternatively, absolute values instead of a percentage could also be utilized. For example, using the same 100,000 pound ACL, the ACT would be calculated as follows: (2000 pounds + 6000 pounds + 0 pounds) ÷ 3 = 2,667 pounds, which results in that amount being reduced from the 100,000 pound ACL in the following year, or an ACT of 97,330 pounds. It is important to note, however, that assuming a static ACL for a number of years sequentially is unrealistic. More likely the ACL will vary annually due to fishery dynamics; therefore, using the percentage approach would likely be employed in these situations because this method allows the value of any overages to be standardized.

The second approach for setting an ACT is based on a percentage reduction from ACL using the SEEM analysis. This approach could be used regardless of whether an ACL is set equal to or less than the ABC. Under this approach, instead of applying the 3-year running average approach, the Council could apply the full SEEM analysis described under Method 1 to set the ACT below the ACL when the ACL equals the ABC. If ACL is set lower than the ABC because the social, ecological, and economic factors have already been taken into account, then the ACT can be set by using the 3-year running average approach described above or based on factors related to management uncertainty (i.e. the M part of the SEEM analysis).

3.1.4 Administrative Process for Setting the ABCs and ACLs

This section describes the administrative timelines and procedures for calculating ABCs, and specifying ACLs and AMs. For each stock or stock complex that requires an ACL, the Council and SSC shall compile relevant scientific information from the Pacific Islands Fishery Science Center and other scientific bodies, including but not limited to, Pelagic Fisheries Research Program, University of Hawaii, Western and Central Pacific Fisheries Commission (WCPFC), and the Inter-American Tropical Tuna Convention (IATTC) and local marine resource management agencies. The SSC will then evaluate the information and determine whether such data are the best available scientific information. Based on this information and with guidance from its SSC concerning which tier the stock qualifies for (described in section 3.1.1.1), the Council will form a team to conduct the qualitative analysis for determining P* (if the stock is in tiers 1-3) as described in Section 3.1.1.2. The resulting P* will be vetted through the Council's advisory bodies and if adopted by the Council, will be provided to the SSC. Upon receipt of the Council's recommended P* values, the SSC will apply the associated control rule from the appropriate tier to determine the ABC.

The SSC may also utilize any other information deemed useful to establish the ABC and may recommend an ABC that differs from the results of the control rule calculation based on factors such as data uncertainty, recruitment variability, declining trends in population variables, and other factors determined relevant by the SSC. However, the SSC must explain its rationale. The SSC shall recommend the ABC to the Council prior to the start of the fishing year with sufficient time for the Council to determine the ACL and AM(s).

Upon receipt of the SSC's recommended ABC, the Council will determine an ACL for the fishery that is equal to or less than the SSC's recommended ABC based on one of the methods described in Section 3.1.2 and whether an annual catch target (ACT) is also utilized. The specification of an ACL and AM(s) must be implemented by NMFS prior to the start of the fishing year. An ACL may remain valid for no longer than 4 years unless the ACL has been

exceeded more than once in that four year period, the Council chooses to revisit the ACL to improve performance and effectiveness of the fishery, or a stock assessment or best scientific information determines that the ACL is not sufficient to prevent overfishing.

3.2 Action 2: Ecosystem Component Classification

The MSA requires each Council to prepare and submit a fishery management plan for each fishery that requires conservation and management. A Council determines which specific target stocks and/or non-target stocks to include "in the fishery" and must establish reference points, harvest controls, ACLs and AMs for all stocks included "in the fishery." In many cases, for data collection purposes and to integrate ecosystem considerations in the management operations, Councils have included stocks that are not generally targeted or retained in their FMPs. In the western Pacific, the management unit species (MUS) identified in each FEP include both target and non-target stocks, including species of fish that are incidentally caught but not generally retained. The Council chose to include these species in its FEPs for data collection purposes and to integrate ecosystem considerations in the management regime of the FEPs. For example, the Council recommended and NMFS approved the inclusion of all western Pacific coral reef ecosystem resources under the MSA as a proactive measure so that data could be collected on these resources should coral reef fisheries expand from local waters into the U.S. EEZ. While fishery management reference points have not been established for the vast majority of these species, their inclusion under National Standard 3 allows information to be collected so that reference points such as MSY may be developed should fisheries expand into the EEZ. As a default, NS1 treats all stocks included in a fishery management plan as "in the fishery" unless they are identified as Ecosystem Component (EC) species. Since EC species are not considered to be in the fishery, they do not require specification of reference points, ACLs, or AMs. Councils must show rationale for classifying stocks as an Ecosystem Component based on criteria specified in NS1 [50 CFR §600.310(d)(5)].

Alternative 1: No action

Under this alternative, all stocks or stock complexes in the FEPs (Appendix 1) would remain in the fishery and all will have ACLs and AMs specified (except those that qualify for statutory exceptions from the requirements as described in Section 3.3).

Alternative 2: Utilize the Ecosystem Component Classification ***(preferred)***

Under the preferred alternative, the Council would utilize the ecosystem component classification system, and in subsequent actions, would classify certain stocks listed in each FEP as EC species based on the criteria outlined in NS1 (§600.310(d)(5)). NS1 states that an EC species should be: 1) a non-target species; 2) a stock that is not determined to be subject to overfishing, approaching overfished, or overfished; 3) not likely to become subject to overfishing or overfished; and 4) generally not retained for sale or personal use. NS1 (§600.310(d)(5)(ii)) also clarifies that occasional retention of the species would not, in and of itself, preclude consideration of the species under the EC classification, and allows for species to be included in the EC classification for data collection purposes, for ecosystem considerations related to specification of OY for the associated fishery, and/or to address other ecosystem issues. EC species should be monitored such that if new pertinent scientific information becomes available to determine changes in their status or their vulnerability to the fishery and if necessary, they

may be reclassified "as in the fishery." Even if categorized as an ecosystem component, the stock/stock complexes will still be managed under the purview of the MSA.

While the Council intends to utilize the EC classification, specific criteria that are consistent with NS1 Guidelines would be developed when specific species are considered (in subsequent actions). Until the time when a stock/stock complex is categorized as an ecosystem component, it would remain in the fishery and subject to ACL/AM requirements (unless receiving a statutory exception (see Section 3.3)).

Various methods have been discussed thus far for categorizing species as ecosystem components. These include, but are not limited to, a state/federal split, percent of total catch, number of years occurring in catch, and combinations thereof. Particularly for coral reef species utilizing the EC classification will be essential.

3.3 Action 3: Utilize Statutory Exceptions

Unless identified by the Council as an EC species, NS1 guidelines require the mechanism for specifying ACLs and AMs described in Section 3.1 to be applied to all stocks and stock complexes listed in each FEP. However, the MSA provides two exceptions to these requirements. First, ACL and AM requirements shall not apply to a fishery for a species that has a life cycle of approximately one year unless the Secretary has determined the fishery for that species is subject to overfishing. Second, the requirements do not apply to stocks or stock complexes subject to management under an international agreement to which the United States is a party. NS1 guidelines requires the Council to describe the stocks or stock complexes listed in their fishery management plans that have statutory exceptions from ACLs.

Alternative 1: No action

Under this alternative, the Council would not identify any stocks or stock complexes that have statutory exceptions to ACLs and the mechanism for specifying ACLs would be applied to all stocks and stock complexes listed in each FEP in fishing year 2011.

Alternative 2: Utilize Statutory Exceptions ***(preferred)***

Under this alternative, the Council would identify those western Pacific MUS that have a life cycle of approximately one year or are subject to management under an international agreement to which the United States is a party. Although these stocks have statutory exceptions from ACLs, the MSA does not preclude the Council from determining ACLs or other catch limits to the stock, if such actions are deemed appropriate and consistent with MSA and other statutory mandates.

Stocks with an Annual Life Cycle

Upon examination of available life history information for western Pacific MUS, the Council has determined that only three FEP managed species have a life cycle of approximately one year. They are the diamondback squid (*Thysanoteuthis rhombus*), neon flying squid (*Ommastrephes bartrami*), and the purpleback flying squid (*Sthenoteuthis oualaniensis*). All three species are managed under the Pacific Pelagic FEP and their life history information is described in Amendment 15 to the Pelagic FMP (in Yatsu et al. 1997; Nigmatullin et al. 1995; and Nesis

1993) and incorporated into the Pacific Pelagic FEP. None of these pelagic squid species have been determined by the Secretary of Commerce to be subject to overfishing or overfished.

Stocks Subject to International Fishery Agreements

In the western Pacific, two international fishery agreements have been ratified by Congress and are applicable to pelagic species listed in the Fishery Ecosystem Plan for Pelagic Fisheries of the Western Pacific. The international fishery agreements are:

(1) The Convention on the Conservation and Management of Highly Migratory Species in the Western and Central Pacific (WPCFC); and
(2) The Inter-American Tropical Tuna Convention (IATTC).

Article 2 of the WCPFC Convention states **"The objective of this Convention is to ensure, through effective management, the long-term conservation and sustainable use of highly migratory fish stocks in the western and central Pacific ..."** Article 1 defines highly migratory fish stocks as **"all fish stocks of the species listed in Annex 1 of the 1982 Convention [United Nations Convention on Law of the Sea] occurring in the [WCPFC] Convention Area, and such other species of fish as the Commission may determine, except sauries"** (See Appendix 3 for a copy of Annex 1 of the United Nations Convention on Law of the Sea). Similarly, Article 1 of the IATTC Antigua Convention, which entered into force on August 27, 2010, defines fish stocks covered by this Convention as **"stocks of tunas and tuna-like species and other species of fish taken by vessels fishing for tunas and tuna- like species in the Convention Area."**

In evaluating the application of the criteria "subject to management under an international agreement," the Council considered the following factors:

- Whether the international agreement applies to the species and/or to vessels managed under the Pacific Pelagic FEP that fish for and retain tuna and tuna-like species;
- Whether there are relevant international conservation and management measures in place for the species;
- Whether there is an existing international stock assessment for the species; and
- Whether there is intent by the members of international agreement to undertake a stock assessment for the species.

Based on these factors, the Council has determined that all finfish listed under the Pacific Pelagic FEP meet the criteria for a statutory exemption from ACLs and AMs. Although the MSA does not preclude the Council from applying the ACL mechanism on just the U.S. portion of the catch of these stocks, the Council believes that doing so would unfairly penalize U.S. fishermen while having no beneficial impact to the conservation of these stocks throughout their range because the "relative impact" of vessels managed under the Pacific Pelagic FEP to the mortality of the stock is minimal when compared to contribution of international fishing fleets. This can be easily demonstrated by evaluating the relative impact of the U.S longline fleet on its primary target species, bigeye tuna. According to the WCPFC (CCM 2008-01), during the period between 2001 and 2004, the total average reported catch of bigeye tuna in the WCPFC Convention Area by all fishing nations was 97,294 mt. Of this amount, the U.S. contribution was just 4,181, or 4%, of the total mortality of the stock.

Table **1**Table 1 lists all species managed under the western Pacific Pelagic FEP and provides the rationale for applying the criteria for a statutory exception to ACLs for these species. As explained in Table 1, the vast majority of pelagic species fall under the management purview of the WCPFC except for opah, wahoo, and oilfish. However, these species would meet the criteria of stocks managed under the IATTC as these species are "taken by vessels fishing for tunas and tuna-like species in the Convention area of the IATTC." Figure 4 shows the catch from 2004 to 2007 of opah, wahoo, and oilfish. These three species are taken by the Hawaii longline fisheries, which target bigeye tuna and swordfish.

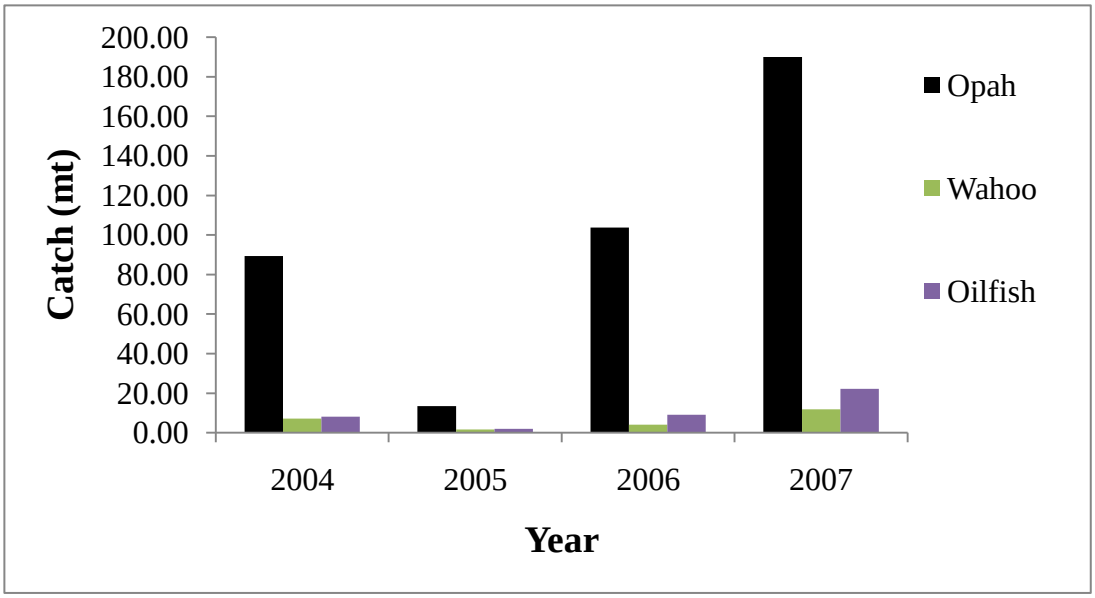


Figure 4. Hawaii longline catch of opah (moonfish), wahoo, and oilfish from the Eastern Pacific Ocean, 2004-2007. Source: NMFS PIFSC.

The Pacific Fishery Management Council (PFMC) took final action in June 2010 to apply the international exception to all MUS in its Highly Migratory Species Fisheries Management Plan (HMS FMP) after reclassifying selected MUS as EC species (Decisions of the PFMC, June 12-17, 2010). Applying the international exception to all western Pacific Pelagic MUS would be consistent with the PFMC's approach.

Currently no other western Pacific MUS (bottomfish, crustaceans, coral reef ecosystem species, precious corals) meet the statutory criteria for exceptions from ACLs and AMs. However, the United States is a Participating State in the negotiations to establish an international agreement for the management of high seas bottomfish fisheries in the northwestern Pacific Ocean. If any international agreement, convention, or treaty is established and ratified by the United States, other western Pacific MUS may meet the criteria for a statutory exemption from ACLs and AMs.

Table 1. Western Pacific pelagic MUS with statutory exceptions from ACL requirements

Scientific Name	Common Name	Rational for Applying Statutory Exception			
		Applicability of WCPFC or IATTC	***Conservation and Management Measure***	***Stock Assessment***	***Annual Life Cycle***
TUNAS					
Thunnus alalunga	albacore	Subject to WCPFC (Annex 1 listed)	WCPFC (CCM-2005-03 limited fishing effort for north Pacific albacore at 2005 levels	S. Pacific completed in 2009; N. Pacific completed in 2006; new assessment planned for 2011	Not Applicable
Thunnus obesus	bigeye tuna	Subject to WCPFC (Annex 1 listed)	WCPFC (CCM-2008-01) established an annual catch limit for bigeye tuna for 2009-2011.	WCPO completed in 2010 and EPO completed in 2009	Not Applicable
Thunnus albacares	yellowfin tuna	Subject to WCPFC (Annex 1 listed)	WCPFC (CCM-2008-01) requires no increase in fishing mortality for this species.	Completed in 2009 (WCPO)	Not Applicable
Thunnus thynnus [Note: species has been renamed by scientific community as *Thunnus orientalis*]	northern bluefin tuna	Subject to WCPFC (Annex 1 listed)	WCPFC (CCM-2009-07) limits fishing effort to the 2002-2004 levels for 2010 north of 20 degrees, including reduction of effort on juveniles.	Completed in 2009; new assessment planned for 2012	Not Applicable
Katsuwonus pelamis	skipjack tuna	Subject to WCPFC (Annex 1 listed)	None	WCPO and EPO completed in 2010	Not Applicable
Euthynnus affinis	kawakawa	Subject to WCPFC (Annex 1 listed)	None	None	Not Applicable

Scientific Name	Common Name	Rational for Applying Statutory Exception			
		Applicability of WCPFC or IATTC	***Conservation and Management Measure***	***Stock Assessment***	***Annual Life Cycle***
Auxis spp. *Scomber* spp. *Allothunus* spp.	other tuna relatives (bullet or frigate tuna, mackerels and slender tuna, respectively)	Subject to WCPFC (Annex 1 listed)	None	None	Not Applicable
BILLFISHES					
Tetrapturus audax [Note: species has been renamed by scientific community as *Kajikia audax*]	striped marlin	Subject to WCPFC (Annex 1 listed)	None	Completed in 2006; new assessment planned for 2011.	Not Applicable
Tetrapturus angustirostris	shortbill spearfish	Subject to WCPFC (Annex 1 listed)	None	None	Not Applicable
Xiphias gladius	swordfish	Subject to WCPFC (Annex 1 listed)	WCPFC (CCM-2009-03) established limit on the number of allowable swordfish vessels and establishing maximum total catch limit for the species south of 20 deg. S. lat.	Completed in 2010.	Not Applicable
Istiophorus platypterus	sailfish	Subject to WCPFC (Annex 1 listed)	None	None	Not Applicable

Scientific Name	Common Name	Rational for Applying Statutory Exception			
		Applicability of WCPFC or IATTC	***Conservation and Management Measure***	***Stock Assessment***	***Annual Life Cycle***
Makaira mazara [Note: species has been renamed by scientific community as *Makaira nigricans*]	blue marlin	Subject to WCPFC (Annex 1 listed)	None	Completed in 2002, new assessment planned for 2012	Not Applicable
M. indica [Note: species has been renamed by scientific community as *Istompax indica*]	black marlin	Subject to WCPFC (Annex 1 listed)	None	Taiwan to conduct assessment.	Not Applicable
SHARKS					
Alopias pelagicus	pelagic thresher shark	All species of the family *Alopiidae* are subject to WCPFC (Annex 1 listed)	WCPFC (CCM 2009-04) requires implementation of FAO International Plan of Action for the Conservation and Management of Sharks.	None	Not Applicable
Alopias superciliousus	bigeye thresher shark	All species of the family *Alopiidae* are subject to WCPFC (Annex 1 listed)	WCPFC (CCM 2009-04) requires implementation of FAO International Plan of Action for the Conservation and Management of Sharks.	None	Not Applicable

Scientific Name	Common Name	Rational for Applying Statutory Exception			
		Applicability of WCPFC or IATTC	***Conservation and Management Measure***	***Stock Assessment***	***Annual Life Cycle***
Alopias vulpinus	common thresher shark	All species of the family *Alopiidae* are subject to WCPFC (Annex 1 listed)	WCPFC (CCM 2009-04) requires implementation of FAO International Plan of Action for the Conservation and Management of Sharks.	None	Not Applicable
Carcharhinus falciformis	silky shark	All species of the family *Carcharhinidae* are subject to WCPFC (Annex 1 listed)	WCPFC (CCM 2009-04) requires implementation of FAO International Plan of Action for the Conservation and Management of Sharks.	None	Not Applicable
Carcharhinus longimanus	oceanic whitetip shark	All species of the family *Carcharhinidae* are subject to WCPFC (Annex 1 listed)	WCPFC (CCM 2009-04) requires implementation of FAO International Plan of Action for the Conservation and Management of Sharks.	None	Not Applicable
Prionace glauca	blue shark	Member of the *Carcharhinidae* family. All species of the family *Carcharhinidae* are subject to WCPFC (Annex 1 listed)	WCPFC (CCM 2009-04) requires implementation of FAO International Plan of Action for the Conservation and Management of Sharks.	Completed in 2009	Not Applicable

Scientific Name	Common Name	Rational for Applying Statutory Exception			
		Applicability of WCPFC or IATTC	***Conservation and Management Measure***	***Stock Assessment***	***Annual Life Cycle***
Isurus oxyrinchus	shortfin mako shark	All species of the family *Isurida* (aka *Lamnidae*) are subject to WCPFC (Annex 1 listed).	WCPFC (CCM 2009-04) requires implementation of FAO International Plan of Action for the Conservation and Management of Sharks.	None	Not Applicable
Isurus paucus	longfin mako shark	All species of the family *Isurida* (aka *Lamnidae*) are subject to WCPFC (Annex 1 listed).	WCPFC (CCM 2009-04) requires implementation of FAO International Plan of Action for the Conservation and Management of Sharks.	None	Not Applicable
Lamna ditropis	salmon shark	All species of the family *Isurida* (aka *Lamnidae*) are subject to WCPFC (Annex 1 listed).	WCPFC (CCM 2009-04) requires implementation of FAO International Plan of Action for the Conservation and Management of Sharks.	None	Not Applicable
OTHER PELAGIC FISHES					
Coryphaena spp.	mahimahi (dolphinfish)	Subject to WCPFC (Annex 1 listed)	None	None	Not Applicable
Lampris spp.	moonfish	This species is commonly taken by Hawaii longline tuna fishing vessels and thus is subject to IATTC.	None	None	Not Applicable

Scientific Name	Common Name	Rational for Applying Statutory Exception			
		Applicability of WCPFC or IATTC	***Conservation and Management Measure***	***Stock Assessment***	***Annual Life Cycle***
Acanthocybium solandri	wahoo	This species is commonly taken by Hawaii longline tuna fishing vessels and thus is subject to IATTC.	None	None	Not Applicable
Gempylidae	oilfish	Species in this family are commonly taken by Hawaii longline tuna fishing vessels and thus are subject to IATTC.	None	None	Not Applicable
Bramidae	pomfret	Subject to WCPFC (Annex 1 listed).	None	None	Not Applicable
SQUID					
Thysanoteuthis rhombus	diamondback squid	Not Applicable	None	None	One year life cycle. Source: Yatsu et. al (1997) in Amendment 15 to the Pelagic FMP
Ommastrephes bartrami	neon flying squid	Not Applicable	None	None	One year life cycle. Source: Nigmatullin et. al (1995) in Amendment 15 to the Pelagic FMP
Sthenoteuthis oualaniensis	purpleback flying squid	Not Applicable	None	None	One year life cycle. Source: Nesis (1993) in Amendment 15 to the Pelagic FMP

4.0 Affected Environment and Impacts

4.1 Area of Potential Effect and Timing of the Specification

The requirement to manage fisheries using ACLs and AMs will affect federal fisheries of the western Pacific region and will be applied to all management unit species (MUS) in the Hawaii, Mariana Archipelago, American Samoa and PRIA FEPs. With possible rare exceptions, it is likely that the proposed ACL and AM mechanism will not be applied to species managed under the Pacific Pelagic FEP because all Pelagic MUS either have annual life cycles (e.g., squid) or are caught in conjunction with a tuna fishery and therefore are subject to international management. Species that fall into these two category are excepted from the ACL/AM requirement pursuant to MSA.

The species that are proposed to be statutorily excepted from the ACL and AM requirement are listed in Table 1 (Section 3.3) and Table 17 (Section 4.15.6.3). The application of the exception from ACLs to these species is an administrative action and would not result in a change to the way these species are currently monitored or how the fishery is conducted; therefore, there would be no environmental effect from the statutory exception designation of specific species. As described in Section 4.15.6.3.1, international regional fishery management organizations will continue to obtain fishery information on these species that can then be used for management purposes.

Non-pelagic federal fisheries in the western Pacific are conducted in U.S. EEZ waters; specifically, in the federal waters (from 3-200nmi) around Hawaii, American Samoa and Guam, and in federal waters (from 0-200nmi) around CNMI and the PRIA. Vessels associated with federal fisheries transit waters from the shoreline to the extent of the federal fishery activity in the U.S. EEZ. Approval of the mechanism would not affect the location of the pelagic or demersal fisheries because it is an administrative process.

4.2 Affected Fisheries

Only federal demersal fisheries in each of the four archipelagic areas (American Samoa, Hawaii, Mariana Archipelago, and PRIA) would be subject to ACL and AM specifications; pelagic fisheries would be afforded statutory exception from ACL and AM requirements. The affected fisheries are summarized in Section 4.15. More detailed descriptions of the fisheries and their respective environmental settings can be found in the FEPs for each archipelagic area (WPFMC 2009a-d) and the Pacific Pelagic FEP (WPFMC 2009e). Current fishery management regulations may be found in 50 CFR §665. A brief overview of fishery performance is provided in Section 4.15.

Some of these fisheries currently have harvest limits (quotas) specified. The proposed mechanism will be used to develop ACLs and AMs, and these could result in different harvest limits than those currently specified. Although it is not known what the ACLs may be, the limits may be the same as current limits, or they could be lower or higher. Changes in the fishing limit would be the result of using a different method than the one that established the current limits. However, if after evaluation of the available data, the ABCs remain identical to the previously-established ABCs, under the proposed mechanism the Council would be within its management authority to recommend maintaining the current catch limit.

Although permits are required in most western Pacific fisheries, many currently do not operate under harvest limits (i.e. quotas). Stocks currently subject to harvest limits are shown in Table 2. For fisheries currently operating without harvest limits, management under ACLs and AMs will be a new management scheme. Additional environmental review and public input opportunities will be provided at the time that the specific ACL and AM recommendations are developed.

Table 2. Existing harvest limits for fisheries in the western Pacific region.

Areas	Species	Limit	Timeframe
Precious Corals Fisheries[1]			
All western Pacific FEP areas	Gold coral	0 (zero)	Moratorium expires June 30, 2013
Exploratory areas in Hawaii, American Samoa, Guam, and CNMI		1,000 kg per area (all species combined, except black coral)	Annual
Hawaii – Au Au Channel	Black coral	5,000 kg	Biennial
Hawaii – Makapuu	Pink coral Gold coral Bamboo coral	2,000 kg 0 kg 500 kg	Biennial
Hawaii – 180 Fathom Bank	Pink coral Gold coral[2] Bamboo coral	222 kg 67 kg 56 kg	Biennial
Hawaii – Brooks Bank	Pink coral Gold coral[2] Bamboo coral	444 kg 133 kg 111 kg	Annual
Hawaii – Kaena Point	Pink coral Gold coral[2] Bamboo coral	67 kg 20 kg 17 kg	Annual
Hawaii - Keahole	Pink coral Gold coral[2] Bamboo coral	67 kg 20 kg 17 kg	Annual
Hawaii – Westpac	All	Zero kg	Annual
Bottomfish Fisheries			
Hawaii – Main Hawaiian Islands	Deep 7 bottomfish	254,050 lbs	Annual
	All bottomfish – non-commercial	5 BMUS/trip per individual	Annual
Hawaii – Hancock Seamounts	Seamount groundfish and Bottomfish	0	Indefinite until moratorium lifted
Crustaceans Fisheries			
NWHI	Spiny/slipper lobsters	0	Annual
Pacific Pelagic			
Hawaii	Bigeye tuna	3,763 mt (2009-2011)	Triennial
American Samoa, Guam, and CNMI	Bigeye tuna	1,000-2,000 mt (proposed annual)	Annual

[1] Black corals and pink corals only have size limits, thus are not listed.
[2] Gold coral quotas listed are those applicable prior to the moratorium, but the current harvest level is 0 (zero).

4.3 Potential Effects of Proposed ACL Mechanism and Future Implementation on Federal Permits

The approval of a mechanism to be used by the Council to develop ACLs and AMs for federal fisheries would not affect existing permit requirements because it is an administrative action. The proposed mechanism will not require the Council to recommend changes to existing permits.

In the future, depending on the specific fishery, there could be new requirements regarding reporting to improve monitoring of ACLs. At this time, there are no new reporting requirements being considered by the Council. Should such requirements be recommended, a separate environmental review would be completed.

4.4 Affected Physical Environment and Impacts of the Proposed Mechanism

The federal fisheries of the western Pacific region that will be subject to management under future ACLs/AMs are demersal fisheries that take place in the waters of the U.S. EEZs across the western Pacific. The physical setting of the western Pacific regional fisheries is described for each area in detail in the FEPs (WPFMC 2009a-e).

Approval of a mechanism to be used by the Council to develop a scientifically based ABC, and a technically and scientifically based ACL/AM for each stock or stock complex in the fishery would not affect the environment because the approval of the mechanism, including the use of statutory exceptions and ecosystem species designations, is an administrative action.

In the future, the physical environment could be affected if the ACLs and AMs were to result in changes to how a particular fishery is conducted. Conceptually, ACLs and AMs are not expected to result in large changes to the manner in which the federal fisheries are conducted and therefore, large adverse impacts to the physical environment are not anticipated. Site specific and fishery specific impact evaluations will be undertaken in the future when ACLs and AMs are available.

4.5 Affected Target, Non-target, and Bycatch Species and Potential Impacts of the Proposed Mechanism

Target, non-target, and bycatch species of the western Pacific regional fisheries are described for each area in detail in the FEPs (WPFMC 2009a-e) as well as the associated Final Programmatic Environmental Impact Statement (WPFMC 2009f) associated with the FEPs.

The proposed mechanism will be used in the future to generate ACLs and AMs for stocks of each management unit species for western Pacific fisheries. No stocks or stock complexes would be directly affected by the approval of the proposed mechanism because it is administrative. No changes to current management are being considered at this time.

Under the proposed action, the fisheries of American Samoa, Guam, CNMI, and Hawaii will operate under ACL specifications unless the Council amends the controlling FEP to classify a stock or stock complex as an ecosystem component (EC) species. ACLs and AMs are not required for EC species. The proposed action includes a general discussion of the criteria that

will be used by the Council in determining which stocks/stock complexes will qualify as EC species, but specific designations and justifications will be provided at a later date.

Under the proposed action, which is administrative, no species managed under the Pacific Pelagic MUS are likely to require ACLs and AMs, as these species are either managed by international fishery management organizations or have an annual life cycle, and thus all qualify for statutory exceptions. Species proposed for statutory exceptions are identified in this amendment in Table 1 (Section 3.3). In the future, the Council may develop ACLs and AMs for statutorily excepted species if warranted; however, the Council is not proposing this at this time.

With the exception of armorhead on Hancock Seamounts, none of the stocks/stock complexes that would be subject to management under ACLs and AMs are overfished or subject to overfishing. Armorhead are overfished across their range due to international fisheries outside the U.S. EEZ. For the past 26 years, federal regulations have prohibited fishing for armorhead within the U.S. EEZ at Hancock Seamounts through several moratoria, which is the maximum protection that can be afforded to the species to aid its rebuilding. The fishing prohibition will remain in place until armorhead stock has been rebuilt. An ACL specification would not adversely affect the moratorium because it would not supplant the moratorium. ACLs and AMs will be specified in the future should fishing resume at Hancock Seamounts for armorhead.

The process ensures that ACL and AM specifications are developed with the best available scientific and management information. Considerations of stock status and the environmental background conditions will be taken into account at the time ACLs/AMs are specified, and at the time of periodic reviews (i.e., stock assessments and Stock Assessment Fisheries Evaluation (SAFE) reports). The mechanism contains precautionary buffers that account for scientific and management uncertainty and may, in some cases, require more intensive monitoring of fishery harvests. For these reasons, when ACLs and AMs are specified, they are expected to help ensure that fishing levels are sustainable over the long term; use of ACLs is intended to prevent overfishing and provide for long-term sustainability of affected stocks. Potential environmental impacts of specifying the ACLs and AMs for target, non-target, and bycatch stocks will be considered again in light of the actual specifications.

Classifying certain stocks and species as ecosystem components or utilizing the statutory exceptions is not expected to result in a change to fishery impacts on these stocks or species, and these classifications would not result in a reduction in management by the Council or international management organizations. The use of these categories is intended to allow the appropriate level of management to continue for those species that are either managed by other fishery management agencies, or that would not benefit from harvest limit management regime. These two proposed actions would not result in a change to the condition of stocks or fishery management information that would be available to fishery managers.

4.6 Affected Protected Resources and Potential Impacts of the Proposed Mechanism

The protected species resources that may interact with federal fisheries include certain species of sea turtles, marine mammals, and seabirds, such as green, leatherback and loggerhead sea turtles,

humpback whales, false killer whales, and Laysan and black-footed albatross (see the FEPs, WPFMC 2009a-e, for a full list of protected resources). The fisheries of the western Pacific region have been evaluated for impacts on protected resources and are managed in compliance with the requirements of the MSA, the Marine Mammal Protection Act (MMPA), the Endangered Species Act (ESA), the Migratory Bird Treaty Act, and other laws and policies. Detailed descriptions of potentially affected resources and interactions with federal fisheries can be found in each FEP (WPFMC 2009a-e) and the impacts of those fisheries on the resources are contained in biological opinions associated with fishery management actions (Table 3). The Council, through various management measures, has reduced the likelihood, number, and severity of interactions with protected resources.

Table 3. Most recent ESA Section 7 consultations for fisheries managed under western Pacific fishery ecosystem plans that will be subject to future ACL specifications.

Fishery	Consultation
American Samoa	
o Bottomfish	March 8, 2002, Biological Opinion
o Coral reef (no current fishery)	March 7, 2002, Letter of Concurrence
o Precious corals (no current fishery)	December 20, 2000, Letter of Concurrence
o Crustaceans (no current fishery)	September 28, 2007, Letter of Concurrence
Hawaii	
o Main Hawaiian Islands (MHI) bottomfish	March 18, 2008, Biological Opinion
o Northwestern Hawaiian Islands (NWHI) Mau Zone bottomfish	March 8, 2002, Biological Opinion
o NWHI Ho'omalu Zone bottomfish	March 8, 2002, Biological Opinion
o Coral reef	March 7 2002, Letter of Concurrence
o Precious corals	December 20, 2000, Letter of Concurrence
o MHI crustaceans	April 4, 2008, Letter of Concurrence
o NWHI crustaceans (no current fishery)	May 24, 1996, Biological Opinion
Mariana Islands	
o CNMI deep bottomfish	June 3, 2008, Letter of Concurrence
o CNMI shallow bottomfish	June 3, 2008, Letter of Concurrence
o CNMI coral reef	June 3, 2008, Letter of Concurrence
o CNMI precious corals	April 18, 2006, Letter of Concurrence
o CNMI crustaceans	September 28, 2007, Letter of Concurrence
o Guam deep bottomfish	June 3, 2008, Letter of Concurrence
o Guam shallow bottomfish	June 3, 2008, Letter of Concurrence
o Guam coral reef (no current fishery)	March 7, 2002, Letter of Concurrence
o Guam precious corals (no current fishery)	December 20, 2000, Letter of Concurrence
o Guam crustaceans	September 28, 2007, Letter of Concurrence
Western Pacific Pelagic Fisheries	
o Hawaii deep-set longline	October 4, 2005, Biological Opinion
o Hawaii shallow-set longline	October 15, 2008, Biological Opinion
o Hawaii pole-and-line	August 21, 2008, Letter of Concurrence
o American Samoa longline	September 16, 2010, Biological Opinion
o Western Pacific troll and handline	September 1, 2009, Biological Opinion
o Western Pacific squid jig	July 16, 2008, Letter of Concurrence

None of the affected fisheries are currently operating in areas designated as critical habitat for species that are listed as threatened or endangered under the ESA; however NMFS is currently working on proposed revisions to Hawaiian monk seal critical habitat. The agency has recently proposed listing of the false killer whale under the ESA and is also evaluating whether to revise the ESA listing status of the loggerhead sea turtle. Additionally, NMFS is also evaluating whether to list the bumphead parrotfish and a number of coral species under the ESA, although nothing specific has been proposed as of this date. If any species are listed, critical habitat could be designated in areas that may be affected by federal fisheries (NMFS PIRO Protected Resources Division, pers. comm. Dec. 12, 2010).

The proposed action would not have a direct effect on protected resources or existing critical habitat designations because the proposed action is administrative and will not result in changes to the way any fishery is conducted. No changes to current management are being considered at this time. Managing fisheries of the western Pacific region using ACLs and AMs will be an addition to the existing fishery management regime and is intended to provide for biologically-sustainable catch limits for fishery stocks. It is not anticipated that the ACLs and AMs will result in large changes to interactions between the fisheries and protected resources.

Because the western Pacific regional fisheries are currently sustainably managed and subject to conservation measures in accordance with various resource conservation and management laws, and because the future specification and use of ACLs/AMs is not expected to result in large changes to the demersal fisheries of the region, implementing fishery management that includes catch limits and accountability measures (e.g., in season closure upon attainment of ACL or downward ACL adjustments) is not expected to change the distribution, abundance, reproduction, or survival of listed species or increase interactions with protected resources. The environmental impacts of potential changes in the conduct of the fisheries on protected resources under specific ACLs and AMs will be evaluated at the time that they are recommended. If substantial changes to the conduct of the fisheries are projected to occur, the Council and NMFS will initiate additional consultations as required by existing laws.

Under both the status quo and proposed action, if at any time the fishery, environment, or status of a listed species or marine mammal species were to change substantially, or if a fishery were found to be occurring in or near new critical habitat, NMFS would undertake additional consultation as required to comply with requirements of the ESA and the MMPA.

4.6.1 Special Resource Areas and Potential Impacts of the Proposed Mechanism

Special marine resource management areas that the federal fisheries operate in or near include areas designated as Essential Fish Habitat (EFH) and Habitat Areas of Particular Concern (HAPC) in accordance with the MSA. These areas are described in the respective FEPs (WPFMC 2009a-e). Other special resource areas that federal fisheries may operate in or near include marine national monuments (MNM), national marine sanctuaries (NMS), and national wildlife refuges (NWR). Federal marine protected areas in the vicinity of affected federal fisheries may include Rose Atoll MNM and NWR (American Samoa); the Hawaiian Islands Humpback Whale NMS, Papahanaumokuakea MNM and the Hawaiian Islands NWR in the Northwestern Hawaiian Islands (NWHI), and monk seal designated critical habitat (Hawaii);

Marianas Trench MNM in CNMI; and Pacific Remote Islands MNMs and various NWRs in the Pacific Remote Island Areas.

Fishing occurring in marine national monuments is conducted according to monument permits that ensure the activity is compatible with monument resource protection. Only fishing in the NWHI under a monument permit occurs near areas designated as critical habitat for the Hawaiian monk seal.

Fishing vessels may transit through or near to the following managed marine areas: Fagatele NMS, Rose Atoll NWR and MNM (American Samoa); State of Hawaii Bottomfish Fishing Restricted Areas (BRFAs); various State of Hawaii marine life conservation districts, and the Hawaiian Islands Humpback Whale NMS (Hawaii). Currently, fishing vessels are not known to adversely affect the qualities or management of these areas.

The approval of a mechanism to develop ACLs and AMs is administrative and would not affect fishing activities or the environment at this time, and there would be no impacts to EFH or HAPC or other special marine resource areas. In the future, managing fisheries with ACLs and AMs is not expected to change the conduct of fisheries unless fishing is constrained as the result of a lowered catch limit. Overall, improved management of fishery resources in the form of catch limits, fishery reporting, and monitoring of harvest is not likely to result in impacts to EFH, HAPC, or other special management areas including critical habitat, marine monuments, or other designated management areas, or the general marine environment. In the future, at the time specific ACLs and AMs are available, potential impacts of the proposed specifications on special resource areas will be considered.

4.6.2 Candidates for Listing and Potential Critical Habitat Designations

At present, federal fisheries of the western Pacific region do not occur in areas designated as critical habitat. Critical habitat designation is being considered in the main Hawaiian Islands for monk seals, but no specific areas are currently designated. NMFS is assessing the potential listing of up to 75 species of corals in the Pacific and the bumphead parrotfish under the Endangered Species Act, and is considering designation of critical habitat in association with any future listing action.

The proposed action will not have an impact on areas being studied for potential critical habitat nor would it affect the potential listing of candidate species as it is an administrative action. In the future, managing fisheries with specific harvest controls (ACLs/AMs) is not expected to change the conduct of fisheries to the extent that there would be a large and adverse impact on areas being studied as critical habitat or to listed species and their habitats. When specific ACLs/AMs are available, the effects of implementing the specifications on proposed critical habitat for monk seals in the MHI will be evaluated.

With regard to the 75 candidate species of corals in the Pacific and the bumphead parrotfish being considered for listing as endangered or threatened, the potential management of western Pacific fisheries using harvest controls is not expected to change the conduct of fisheries such that there would be an adverse impact to these species or their habitats, nor would this type of

management control be expected to affect the quality of the habitat for these species and change the likelihood of the habitat or the species qualifying for critical habitat or listing.

Both for status quo and the proposed action, should fishery management need to be refined in order to reduce impacts to rare coral reef species or their habitats, the Council would take separate action.

4.7 Affected Fishers and Fishing Communities and Potential Effects of the Proposed Mechanism

The primary fisheries potentially affected by the proposed action are the federal non-pelagic fisheries whose stocks are subject to the ACL/AM requirement. In American Samoa, Hawaii, and Guam, these federal fisheries occur beyond 3 nautical miles (nm). In CNMI, this includes nearshore areas as well because federal jurisdiction extends from the shoreline to 200 miles. There are generally no federal non-pelagic fisheries in the PRIAs, nor resident human communities defined under the FEPs as "fishing communities." For this reason, the PRIA social environment will not be considered further in this EA. Also, because all pelagic MUS are likely to be statutorily excepted from ACL and AM requirements, the social environment associated with the pelagic fisheries will not be considered further.

The proposed action for developing ACLs and AMs would not have an impact on the social environment of the remaining affected areas, including fishery participants and fishery communities or other marine resource users, as it is an administrative action. In the future, managing federal fisheries with ACLs and AMs is not expected to result in a large change to the way fisheries are conducted in any of the four populated areas.

Fishery participants in CNMI may be required to comply with more ACLs and AMs than residents of other areas because federal waters extend from the shoreline to the 200 nm boundary. It is not known how these individuals or communities will be affected by the new requirements. In general, however, preventing overfishing through harvest controls along with other management measures is expected to promote long-term sustainability of the fisheries without resulting in large changes to the way in which fishing occurs, which should have a general positive long-term effect on fishing communities; however, for under-utilized fishery resources, harvest controls such as ACLs set equal to current harvest limits may preclude fisheries from further development.

For all fisheries affected by the requirement, at the time ACLs and AMs are available, additional site- and fishery-specific impact reviews will be conducted to assess the potential effects ACLs and AMs would have on the fishery resources used by these communities, and any associated social, cultural and economic effects.

4.8 Interaction with State and Territorial Fishery Regulations and Management

All four populated areas have existing state, territorial, or commonwealth fishery and other marine resources conservation and management laws and requirements. These can be found on the State, Territorial, and CNMI websites provided in Table 4.

Table 4. Current state and territorial fishing regulations websites.

Location:	Applies to:	Local fishery management division:	Website:
Territory of American Samoa	Territorial waters	Department of Marine and Wildlife Resources (DMWR)	Title 24 of the the American Samoa Code, Chapter 03, Sections 24.0301-24.0312 (http://www.asbar.org/)
State of Hawaii	State Waters	Hawaii Dept. of Land and Natural Resources, Division of Aquatic Resources (DLNR-DAR)	Hawaii Administrative Rules, Title 13, Dept of Land and Natural Resources, Subtitle 4 Fisheries. http://hawaii.gov/dlnr/dar/admin_rules.html and http://capitol.hawaii.gov/site/HRS/HRS.htm
Territory of Guam	Territorial waters	Guam Dept. of Agriculture, Division of Aquatic and Wildlife Resources (GDAWR)	Fishing regulations can be found at: http://www.guamdawr.org/aquatics/fisheries2/
Commonwealth of the Northern Mariana Islands (CNMI)		Div. of Fish & Wildlife (DFW)	Fisheries information can be found at: http://www.dfw.gov/mp/#

The proposed mechanism for developing ACLs and AMs is not expected to have an impact on local fishing laws as it is an administrative action that, when used in the future, will result in ACLs and AMs that will apply to federal fisheries only. Local agencies are not compelled to match the harvest limits, although local resource agencies may voluntarily decide to do so.

In the future, when specific ACLs and AMs are developed, the Council will consider potential interactions between and among ACL and AM specifications and local resource laws. At that time, the Council or affected state, territory, or commonwealth government entity can make recommendations on measures that would enhance coordination and reduce any conflicts that might arise as a result of the ACL and AM requirements.

4.9 Ability of Fishery Participants to Comply with ACLs and AMs

The proposed action for developing ACLs and AMs will not have an impact on compliance as it is an administrative action. In general, compliance by fishery participants in fisheries that currently do not have catch limits may be slow as this is a new management approach. However, once ACLs are specified, compliance is not expected to be difficult if education and outreach efforts are included during ACL development and specification. In the MHI deep 7 bottomfish fishery, timely notification, outreach meetings, and informational materials have already helped fishermen comply with TAC limits and in-season closures.

The ACL and AM specifications produced in the future using the proposed mechanism will result in harvest limits and other requirements that will apply to federal fishery participants in most fisheries. The Council has been working with its constituents to promote an understanding of the reason for the change in fishery management. Participants in the various fisheries will

continue to have opportunities to learn about ACL and AM requirements, and to participate in the decision-making process at different points along the planning and implementation timeline.

The Council will develop ACL and AM specification recommendations at its public meetings, at which there will be opportunities for members of the public to comment on proposed specifications. ACLs and AMs will be published on Council, NMFS, and/or local government websites. Although no specific details are available about the methods to be used to communicate both the ACL and AM specifications, as well as any fishery changes that occur as a result of the harvest limit management requirement, in addition to Federal Register notices it is likely that the Council will use the internet and meetings supplemented with other forms of notification such as newsletters and, in some cases, direct mailings to inform interested and affected parties of the requirements and how to comply. Additional outreach efforts such as meetings, compliance guides, articles, press releases, radio shows, and website postings will communicate to affected parties and promote compliance with ACL requirements.

Additional environmental and socio-economic impact reviews will occur at the time ACL specifications are available, which will provide opportunities for the public to understand the proposed specifications, and for the Council to learn about issues that may inhibit compliance and address these issues in a timely manner.

4.10 Potential Impacts on the Economy

Fisheries of the western Pacific region are managed in accordance with the MSA, which calls for consideration of both the sustainability of the nation's fishery resources, as well as the use of the nation's fishery resources for sustenance and economic prosperity. Proposed fishery regulations are considered in terms of complying with these provisions of the MSA. Currently, throughout the western Pacific region, fishing is managed sustainably and provides communities with opportunities for jobs and food.

The proposed action for developing ACLs and AMs will not have an impact on local or national economy as it is purely an administrative action. In the future, managing some fisheries with specific harvest controls (ACLs/AMs) could affect local economies, although the effects are generally not expected to be large or necessarily adverse, as commercial fishing is a small component of the economies of the western Pacific islands. The proposed action is intended to ensure that fish stocks are harvested sustainably, which would help provide for long-term economic viability.

Additional site-specific and fishery-specific economic review will be done at the time that specific ACLs and AMs are available and the impacts on fishermen, local, and national economies will be considered at that time.

4.11 Potential Impacts on Fishery Administration and Enforcement

Fishery managers and administrators currently expend management resources on collecting and reviewing data, responding to data requests, analyzing fisheries data, and implementing fishery management measures intended to improve fishery conservation and management in the western Pacific region. Federal fishery regulations are currently enforced by NOAA Office of Law

Enforcement and the U.S. Coast Guard, with cooperation from local natural resource conservation law enforcement agencies.

The proposed action for developing ACLs and AMs will not have an immediate impact on fishery administration or enforcement as it is purely an administrative action. However, in the future, managing fisheries via ACLs and AMs is likely to affect fishery managers by requiring additional management effort to be expended. Specifically, substantial investment in resources, including personnel, will likely be required to collect and monitor catch. Furthermore, because the majority of federally managed fishery resources in the western Pacific fisheries have a state catch component, resources will be required to implement data collection systems that can account for the spatial resolution in the catch. Additional management efforts will also be required when reviewing fishery performance, implementing annual specifications and accountability measures, and conducting outreach and educational activities to inform the affected public of the ACL each fishing year. These activities will require the expenditure of public funds to pay for the new level of management activity. These are administrative activities and will not likely lead to environmental effects.

Management of the federal fisheries via ACLs and AMs will require changes to law enforcement, as agents will need to understand new requirements and will be tasked with enforcing any fishery closures or other accountability measures that are enacted in association with the ACLs and AMs. These activities will require the expenditure of public funds to pay for any activity above the current level of law enforcement conducted in the area. Changes to law enforcement are not currently projected to have environmental effects.

Additional site specific and fishery specific environmental reviews will be done at the time that specific ACLs and AMs are available; impacts on fishery administration and enforcement will also be considered at that time.

4.12 Potential Impacts on Environmental Justice

Executive Order 12898 directs federal agencies to consider the potential for proposed actions to result in environmental impacts with disproportionately high and adverse impacts to members of environment justice populations (low-income and/or minority groups). Guam, CNMI, American Samoa, and Hawaii all have members of environmental justice populations (low-income and/or minority groups) that participate in fisheries or live in communities that participate in fisheries. There are currently no known high and adverse environmental impacts of ongoing fishery management in the western Pacific that are affecting any community members, including members of environmental justice populations.

The proposed action for developing ACLs and AMs will not have an impact on the environment or on members of environmental justice populations as it is an administrative action. In the future, managing fisheries with ACLs and AMs is not expected to result in a large change to the demersal fisheries such that there would be large and adverse environmental impacts. The management measure is intended to help ensure the continued sustainability of fish resources. It is expected to provide a higher level of management monitoring, which is expected to have overall beneficial environmental impacts because managers would be required to account for catches in all fisheries, not just those that are important economically. Additional site specific

and fishery specific environmental reviews will be done at the time that specific ACLs and AMs are available; impacts on environmental justice populations will also be considered at that time.

4.13 Potential Impacts on Climate Change and Efficacy of ACLs and AMs in the Face of Climate Change

Climate change has the potential to directly or indirectly impact target, non-target, and bycatch stocks, as well as affect protected resources that interact with fisheries. In general, climate change has the potential to improve or degrade the environmental conditions of the marine ecosystem and can affect species abundance, distribution, survival, reproduction, and migratory patterns. Climate change can result in changes to ocean temperatures, salinity, acidity, turbidity, oxygen, circulation patterns, nutritional and thermal gradients, and global weather patterns that affect the ocean and coastal environments. Sea level rise resulting from melting polar ice and thermal ocean expansion have the potential to result in the physical loss of coastal habitats and degradation of, or changes to, coastal or nearshore marine habitats that can adversely affect fisheries and wildlife and cause damage to coastal infrastructure. In some cases, the effects of global climate change, or even smaller scale climate patterns, may be detectable on short and long-term time scales and/or at local levels. In other cases, data may be lacking with which to determine local impacts. For these reasons, it is often difficult to understand the complex relationships among climate change impacts and the myriad ecological processes interacting in dynamic environments.

Climate change in fisheries will generally be observed directly in cases of coastal inundation and changes to local weather, and can be indirectly accounted for in stock assessments, fish abundance and distribution patterns, and other observed changes in the fishery. The effects of climate change on the status of stocks, stock complexes, protected resources, and the environment will continue to be part of the background environment that is considered in both ongoing management of fisheries of the western Pacific region and in considering the effectiveness and environmental impacts of future proposed fishery management actions.

The proposed action is administrative and will not have an environmental outcome, and therefore will not result in greenhouse gas emissions or be affected by climate change. Although there are no specific ACLs or AMs being recommended at this time, management of the affected fisheries using ACLs and AMs would require fisheries managers, scientists, and participants to monitor fishing activities with greater intensity, which would allow fishery managers to respond to any detectable changes in stock status or conditions in the environment to ensure a particular fishery is not having substantial adverse environmental effects on the marine environment. While ACLs and AMs may require increased monitoring, the proposed action is not expected to result in more intensive or extensive fishing activity.

At the time that specifications for ACLs and AMs are recommended, the Council will review proposed fishery outcomes for potential contributions to global climate change, and for impacts from climate change on the efficacy of the ACLs and AMs.

4.14 Cumulative Effects of the Proposed Action

Fisheries are dynamic activities that take place in a dynamic setting. The potential impacts of a proposal on the environment given past, present, and reasonably foreseeable actions by the same

agency or others is an important part of an impact analysis. The proposed action for developing ACLs and AMs will not have an impact on the environment as it is an administrative action.

Among the past and present actions, fisheries of the western Pacific region are currently considered sustainably managed, and no demersal stocks or stock complexes are currently overfished or being subject to overfishing with the single exception of armorhead, which is overfished due to international fishing outside of U.S. jurisdiction and is subject to moratorium in federal waters.

There are currently a number of proposed fishery management actions being considered by the Council. These include proposed gear modifications to reduce sea turtle interactions in the American Samoa longline fishery; proposed changes to longline participant entry requirements in American Samoa; proposed longline prohibited areas in CNMI and American Samoa; proposed purse seine prohibited areas in CNMI, Guam, and American Samoa; proposed changes to fish aggregation devices use by purse seiners in U.S. EEZs; a proposal to allow charter arrangements between territories and fishing groups to catch bigeye tuna in exchange for responsible fishery development in the territories; and proposed changes to managing deep-set tuna fishing in Hawaii to allow for increased retention of swordfish.

Activities by others that are currently occurring that generally may affect the same resources or occur in the same areas as demersal fisheries include the military expansion in Guam, military and merchant marine and other commercial vessel traffic in all four populated areas, ocean aquaculture, and ocean energy development.

Without specifications, it is not possible to consider interactions among activities to determine whether or not or how impacts of a particular ACL and/or AM might interact with other actions to affect the environment. In general, fishery management measures will continue to be discussed in public meetings with opportunities for interested and affected members of the community to have input on measures while they are being developed and before decisions are made. This will allow the Council and NMFS to determine when a particular ACL and/or AM might result in an interaction with other activities. The public process inherent in the MSA will also allow the Council to develop additional fishery management measures to reduce any large and adverse impacts of a proposed ACL and/or AM that might be projected to occur.

Conceptually, in view of proposed fishery management actions that are concurrently being considered, the management of domestic fisheries using ACLs developed under the proposed mechanism would not adversely affect the effectiveness of other proposed fishery management measures also being considered. It is not likely those proposals (even in the early stages) would affect the efficacy or impacts associated with using ACLs and AMs to control catch in demersal fisheries.

In the future, as specific ACLs and AMs become available, cumulative effects analyses will be done prior to a decision being made to implement the ACL and its corresponding AM.

4.15 Description of the Fisheries

4.15.1 Maximum Sustainable Yield, Optimum Yield, and Status Determination Criteria for Western Pacific Fisheries

Maximum sustainable yield (MSY), optimum yield (OY), status determination criteria (SDC), and other reference points for the fisheries of the Western Pacific Region were described in the Coral Reef Ecosystems FMP (69 FR 8336; February 24, 2004), Amendment 4 to the Precious Corals FMP (64 FR 19067; April 19, 1999), Amendment 6 to the Bottomfish FMP (68 FR 46112; August 5, 2003), Amendment 8 to the Pelagics FMP (68 FR 46112; August 5, 2003), and Amendment 10 to the Crustaceans FMP (68 FR 46112; August 5, 2003). These reference points were also updated and incorporated into the FEPs for American Samoa, Hawaii, the Mariana Archipelago, the Pacific Remote Island Areas and western Pacific Pelagic fisheries. In some instances, MSY values were not actually specified for all species because there is a significant lack of data to warrant a reliable estimate or proxy. However, the FEPs include a method based on reproductive potential by which NMFS and the Council can estimate MSY for all managed stocks when data becomes available. Additionally, estimates of MSY for certain federally managed stocks are updated every few years by NMFS Pacific Islands Fisheries Science Center, the Western and Central Pacific Fisheries Commission, the Inter-American Tropical Tuna Commission, and/or the International Scientific Committee for Tuna and Tuna-like Species in the North Pacific Ocean; these are then incorporated into amendments to the FEPs.

With regards to SDC and overfishing definitions, the FEPs utilize the maximum fishing mortality threshold (MFMT) as its SDC for overfishing because it is based on a long-term average, as opposed to an annual OFL value. The FEPs also utilize minimum stock size threshold (MSST) as the SDC for an overfished determination. The original references for MSY, OY, and SDC processes for western Pacific fisheries that were incorporated into the FEPs for American Samoa, Hawaii, the Mariana Archipelago, the Pacific Remote Island Areas and western Pacific pelagic fisheries are as follows:

Reference	Management Unit Species	Section Specifying MSY	Section Specifying OY	Type of SDC Utilized
WPFMC 2002	Bottomfish	4.1.2.2	4.1.1.2	MFMT & MSST
WPFMC 2002	Crustaceans	4.3.2.2	4.3.1.2	MFMT & MSST
WPFMC 2002	Pelagics	4.2.2.2	4.2.1.2	MFMT & MSST
WPFMC 2001	Coral Reef	4.3.3	4.3.3	MFMT & MSST
WPFMC 1998	Precious Corals	4.5.4	4.5.4	MFMT

4.15.2 American Samoa Archipelago FEP

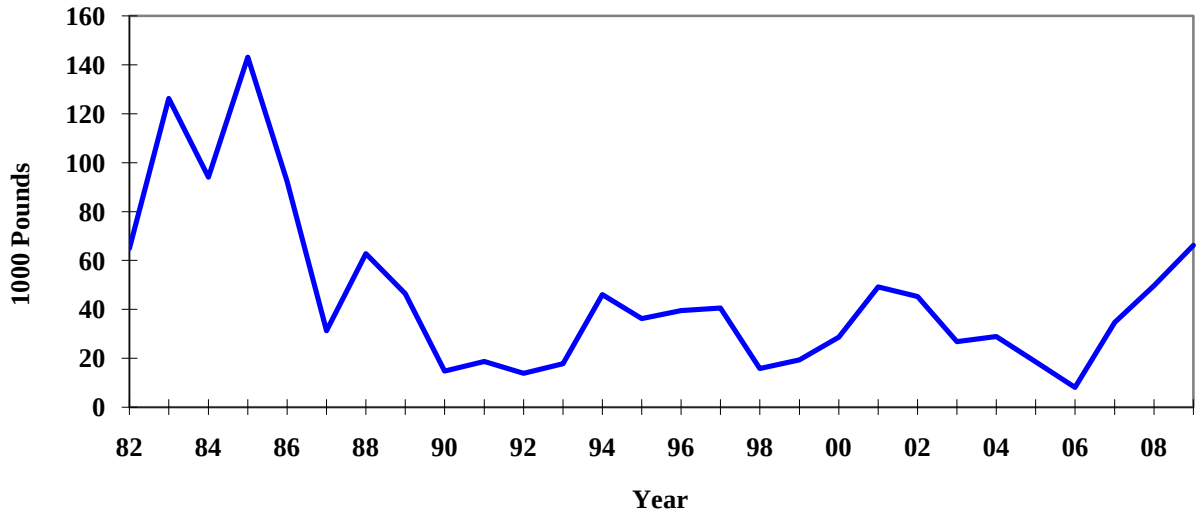
4.15.2.1 Description of the American Samoa Bottomfish Fishery

The following description is summarized from the American Samoa FEP (WPFMC 2009a), where the full description can be found as well as source material; additional citations below are not found in WPFMC 2009a. The bottomfish fishery of American Samoa consists of part-time vessels that typically jig overnight using skipjack tuna as bait. Most vessels are aluminum alia catamarans less than 30 foot length; many are outfitted with wooden hand reels for trolling and bottomfish fishing. Because few boats carry ice, they typically fish within 20 miles of shore. In

recent years, however, a growing number of fishermen in American Samoa have been acquiring larger (> 35 ft) vessels with capacity for chilling or freezing fish and a much greater fishing range.

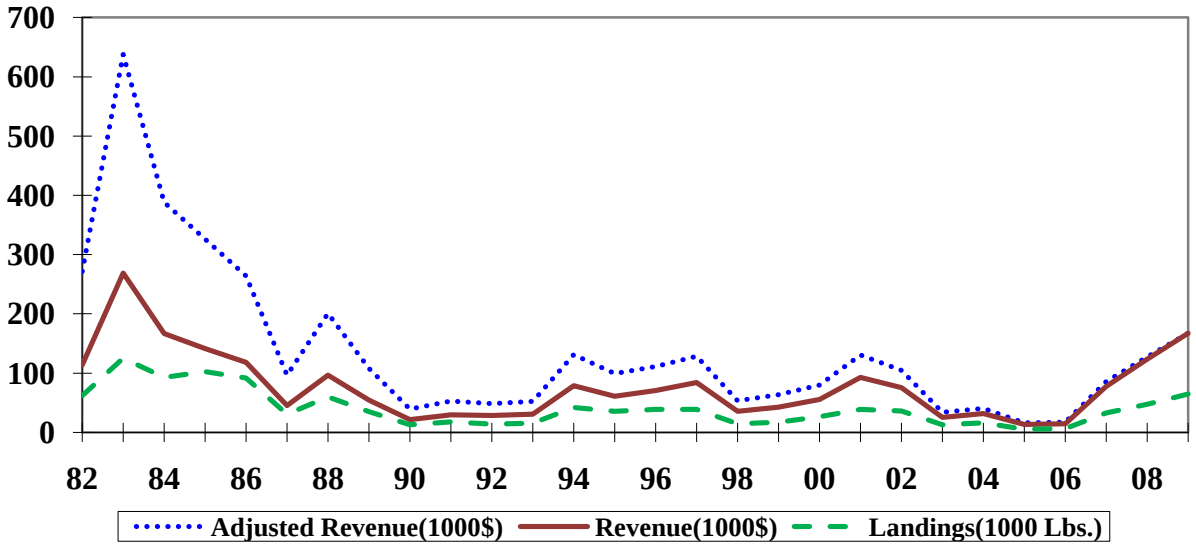
Commercial landings of bottomfish account for almost all of the total bottomfish catch; recreational or subsistence bottomfish catches were very small. Commercial catch of bottomfish has declined significantly since its peak in 1985 (Figure 5). The overall decline between 1985 and 2000 was due to five hurricanes that struck the territory, the departure of several highliners from the fishery, a shift by the fleet from bottomfish fishing to trolling for pelagic species, and increased competition from imports of bottomfish from Samoa and Tonga. In 2001, landings increased slightly, but declined steadily again through 2006 as fuel prices increased (WPFMC 2008c). There was an upturn in landings, however, from 2007 thru 2009. Landings in 2009 equaled 66,235 pounds; however, the tsunami of September 2009 destroyed almost the entire bottomfish fleet so there was virtually no bottomfishing for the remainder of the year. Consequently, bottomfish landings and revenues were 98% less than October 2008 (WPFMC 2010). Total revenue for the month of November has declined by 42% in 2009 compared to 2008, before the tsunami. Recovery of the bottomfish fishery is expected to occur as the fleet is replaced. Impacts to the participants are primarily from damaged or lost vessels and gear.

Figure 5. American Samoa total bottomfish landings from 1982-2009



Since 1998, some alias have returned to bottomfish fishing when longline catches and prices for pelagic species declined. In 2005 a total of 16 boats landed an estimated 20,255 pounds with 30% of this sold commercially for an estimated $14,521 revenue value. There have been no notable changes in per trip revenues since the 1990s with an average of approximately $300 per trip, although revenues and landings do appear to be increasing (Figure 6).

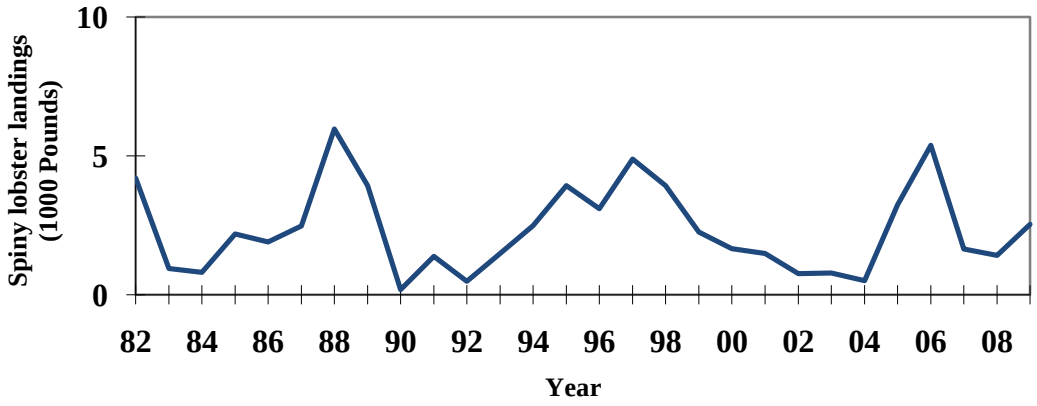
Figure 6. American Samoa estimated commercial bottomfish landings and revenue



4.15.2.2 Description of the American Samoa Crustacean Fishery

The following description is summarized from the American Samoa FEP (WPFMC 2009a), where the full description can be found as well as source material. In American Samoa, lobsters are the primary crustacean fishery. Spiny lobster (*Panulirus penicillatus*) is the main species speared by night near the outer slope by free divers while diving for finfish. Total landings (Figure 7) expanded from a market survey are estimated to average 1,271 pounds of spiny lobsters sold per year, without taking subsistence and recreational catches into account.

Figure 7. Annual landings of spiny lobster in American Samoa from 1982 to 2009.



No fishing for deepwater shrimp has been reported around American Samoa. In 1987, PIFSC fishery scientists conducted sampling at 10 shrimp trapping stations at depths ranging between 200 and 510 fathoms around American Samoa. While some *Heterocarpus* were found at every trapping station, some places may have more abundance than others.

4.15.2.3 Description of the American Samoa Precious Coral Fishery

A federal permit is required to harvest Precious Coral MUS in federal waters around American Samoa and permit holders are required to maintain Federal logbooks of their catch and effort. As described in the American Samoa FEP (WPFMC 2009a), this is an open access fishery but no federal permits had been issued. There are currently no defined precious coral beds or active precious coral fisheries in either federal or Territorial waters around American Samoa. However, because precious coral MUS are known to be in the waters around American Samoa, it is possible a future fishery may develop. If a fishery were to develop in the future, it would be subject to the existing annual harvest quota of 1,000 kg of all species combined (except black corals) in the federal waters around American Samoa. The fishery is also subject to a five-year moratorium on fishing for, taking, or retaining any gold coral in any precious coral permit area. This moratorium includes all waters of the U.S. EEZ of the Western Pacific Region and is in effect through June 30, 2013 (73 FR 47098, August 13, 2008).

4.15.2.4 Description of the American Samoa Coral Reef Ecosystem Fishery

The following section is summarized from WPFMC 2009a, where additional information and source material can be found. In American Samoa, coral reef fishes and invertebrates are harvested in subsistence and small-scale commercial fisheries by various gear types including hook and line, spear gun, and gillnets. The reef fish catch composition in American Samoa is dominated by six families: Acanthuridae (28%), Serranidae (12%), Holocentridae (12%), Lutjanidae (7%), Mugilidae (7%), and Scaridae (6%), although atule (*Selar crumenophthalmus*), a coastal pelagic species, seasonally accounts for a significant portion of the coral reef catch. The majority of the catch is believed to be from Territorial waters and thus not managed by the American Samoa FEP (WPFMC 2009a), but the ecosystem approach to fishery management would warrant consideration of inshore fisheries and stocks as they interrelate with those in federal waters.

Periodic declines in coral reef catches have been observed since the 1990s. The cause of declines in catches is thought to be attributed to a combination of several factors including fishing pressure, natural and anthropogenic habitat degradation (pollution, eutrophication and sedimentation from runoff), sociological changes associated with a shift from subsistence to a market economy, and a series of devastating hurricanes.

Average commercial reef fish catch in American Samoa was 29,500 pounds from 1982 to 2005. The lowest estimated commercial catches were during 1984, the early 1990s, and 2004 with peak estimated commercial catch occurring in 1997 corresponding with the SCUBA spear fishery. Since 2001, commercial reef fish catches are estimated to be below 20,000 pounds annually. Low catch years associated with hurricanes may be the result of fleet damage or fishermen being occupied with other work. The decline in commercial reef fish catches after 1997 may have resulted from increased enforcement of commercial license requirements between 1997 and 2000. In 2001, the use of SCUBA gear while fishing was prohibited to help reduce fishing pressure on the reefs.

4.15.3 Hawaii Archipelago FEP

4.15.3.1 Description of the Hawaii Archipelago Bottomfish Fisheries

The following description of Hawaii's bottomfish and seamount groundfish fisheries is summarized from the Hawaii Archipelago FEP (WPFMC 2009b), where additional information and source material can be found.

The deep-slope bottomfish fishery in Hawaii concentrates on species of eteline snappers (e.g., opakapaka), carangids (e.g., jacks), and a single species of grouper concentrated at depths of 30–150 fathoms. The primary target species which share this deepwater habitat have, for management purposes, been termed the "Deep 7" bottomfish species and include: onaga (*Etelis coruscans*), ehu (*Etelis carbunculus*), gindai (*Pristipomoides zonatus*), kalekale (*Pristipomoides sieboldii*), hāpuʻupuʻu (*Epinephelus quernus*), ʻōpakapaka (*Pristipomoides filamentosus*), and lehi (*Aphareus rutilans*). Other bottomfish species include: uku (*Aprion virscens*), taape (*Lutjanus kasmira*), kahala (*Seriola dumerili*), white ulua (*Caranx ignoblis*), black ulua (*Caranx lugubris*), butaguchi (*Pseudocaranx dentex)* and yellow kalekale (*Pristpomoides auricilla*).

The bottomfish fishery can be divided into two geographical areas: the inhabited main Hawaiian Islands (MHI) with their surrounding reefs and offshore banks, and the Northwestern Hawaiian Islands (NWHI), a chain of largely uninhabited islets, reefs and shoals extending 1,200 nmi across the North Pacific. For management purposes, the NWHI is divided into two zones, the Mau Zone that includes the portion of the U.S. EEZ waters around the Hawaii Islands Archipelago that lie between 161º 20' W. long and 165º W. long, and the Hoomalu Zone which includes the portion of EEZ waters located west of 165º W. long. Additionally, at the northern end of the NWHI is the Hancock Seamounts Ecosystem Management Area in which there is currently a moratorium on the harvest of armorhead, raftfish, alfonsin, and other seamount groundfish (75 FR 69015, November 10, 2010).

In the MHI, approximately 47 percent of the bottomfish habitat lies in state waters. Bottomfish fishing grounds within federal waters around the MHI include Middle Bank, most of Penguin Bank, and approximately 45 nmi of 100-fathom bottomfish habitat in the Maui–Lanai–Molokai complex. Specific bottomfish fishing locales favored by fishermen vary seasonally according to sea conditions and the availability and price of target species. Historically, Penguin Bank is one of the most important bottomfish fishing grounds in the MHI, as it is the most extensive shallow shelf area in the MHI and within easy reach of major population centers. Penguin Bank is particularly important for the MHI catch of uku, one of the few bottomfish species available in substantial quantities to Hawaii consumers during summer months.

In the small-boat bottomfish fishery that is active around the MHI, the distinction between recreational and commercial fishermen is difficult to define because many otherwise-recreational fishermen sell small amounts of their catch to cover trip expenses. With the exception of non-commercial fishing participants fishing in federal waters, the MHI bottomfish fishery is not subject to federal permit or reporting requirements; however, commercial fishermen are required to obtain commercial marine licenses (CML) and submit State catch reports reporting their monthly fishing activity. HDAR catch report forms do not differentiate between state and federal waters, therefore information about catches represents catch from both.

Since 2007, the MHI bottomfish fishery has been managed under a total allowable catch (TAC) limit. The TAC system was triggered by a 2005 review of the status of the fishery which indicated overfishing was occurring on the entire archipelagic-wide multi-stock complex; however, the review determined that the MHI was the area contributing most significantly to the problem, and therefore, where action should be focused. For this reason, the TAC applies only to the MHI bottomfish fishery and only on the component of the fishery that targets deep water species (i.e., the Deep 7 bottomfish). The TAC is set annually based on the best available scientific information and taking into account the associated risk of overfishing. Once the TAC is reached, both commercial and recreational fishing for Deep 7 bottomfish in the MHI is closed. There is no TAC limit for other bottomfish species. Table 5 lists MHI Deep 7 TAC for fishing years 2007-2010.

Table 5. Annual MHI Deep 7 TAC specifications, opening and closing dates of the fishery and final reported landings

Year	TAC	Open	Close	Final Landing
2007/2008	178,000 lbs [1]	Oct. 1, 2007	April 16, 2008	195,861 lbs
2008/2009	241,000 lbs [2]	Nov. 15, 2008	July 6, 2009	258,544 lbs
2009/2010	254,050 lbs [3]	Sept. 1, 2009	April 20, 2010	208,000 lbs
2010/2011	254,050 lbs [3]	Sept. 1, 2010	Ongoing	Yet to be determined

[1] Based on 2006 Stock Assessment/Amendment 14 (Moffitt et al. 2006)
[2] Based on 2008 Stock Assessment from PIFSC (Brodziak et al. 2008)
[3] Based 2009 Stock Assessment from PIFSC (Brodziak et al. 2009)

In the NWHI, the bottomfish fishery, when it operated, occurred exclusively in federal waters; between 2000 and 2005, the NWHI accounted for nearly one third of the bottomfish caught in the state of Hawaii. However, since the establishment of the Papahanaumokuakea Marine National Monument in 2006, bottomfish landings have continually declined as fishermen left the fishery. As of 2010, the NWHI portion of the fishery no longer exists due to completion of a voluntary capacity reduction program (74 FR 47119, September 15, 2009) created by Congress as a result of the establishment of the monument. However, there are areas outside of the monument where bottomfish habitat exists and fishing could be conducted when and if fishing regulations are changed to allow it. Table 6 lists total bottomfish landings from the NWHI during the last five years of the fishery.

Table 6. NWHI 2005-2009 BMUS (x 1000 pounds) (Source: NMFS unpublished data)

Species	2005	2006	2007	2008	2009
Onaga	28	30	31	35	3
Opakapaka	24	18	20	11	5
Ehu	10	6	4	4	>1
Uku	83	90	91	55	25
Hapuupuu	37	21	19	13	6
Butaguchi	12	9	11	5	3
White Ulua	1	2	4	1	>1
Other BMUS	6	4	5	3	1
TOTAL	**201**	**180**	**185**	**127**	**45**

Hawaii seamount groundfish are comprised of three species found primarily on Hancock Seamounts located in the NWHI and include pelagic armorhead (*Pseudopentaceros wheeleri*), alfonsin (*Beryx splendens*), and raftfish (*Hyperoglyphe japonica*). While no domestic fishery has ever targeted seamount groundfish, foreign vessels harvested pelagic armorhead prior to the passage of the MSA and depleted the stock throughout its range. To aid in the recovery of armorhead, the Council recommended and NMFS implemented a moratorium prohibiting fishing for all seamount groundfish and bottomfish at Hancock Seamounts. The moratorium has been in place since 1986 and will remain indefinitely until armorhead stocks are determined to be rebuilt (75 FR 69015, November 10, 2010).

4.15.3.2 Description of the Hawaii Archipelago Crustacean Fisheries

A detailed description of the crustacean fishery is summarized in the Hawaii Archipelago FEP (WPFMC 2009b) where additional information and source materials can be found. This has been supplemented here with more recent catch data. Catch information regarding crustaceans in state and federal waters around the MHI is limited to commercial catches, as there are no federal or state reporting requirements for recreational fishery participants.

Landings of Kona crabs, spiny and slipper lobsters, and deep water *Heterocarpus* shrimps are shown in Figures 8-11, segregated by landings from state and federal waters. Kona crab landings have ranged from around 6,000 – 31,000 pounds (mean = 17,000 pounds) with 30-75% of landings being made from the EEZ or federal waters. Between 30 and 78 commercial fishermen annually reported landing Kona crabs between 1994 and 2009. Spiny lobster and slipper lobsters catches were almost entirely confined to production from State waters between 1994 and 2009. Spiny lobster production ranged from just over 1,300 pounds to about 12,000 pounds (mean = 8,200 pounds) over this time period, while slipper lobster landings were modest, ranging from about 40-900 pounds (mean = 215 lb). Between 16 and 61 commercial fishermen reported landing spiny lobsters between 1994 and 2009, while 4-12 commercial fishermen reported slipper lobster landings in the same period. Two federal permits were also issued by NMFS for lobster fishing in EEZ waters around the MHI in 2007.

Eight species of deepwater shrimp in the genus *Heterocarpus* have been reported throughout the tropical Pacific (*Heterocarpus ensifer, H. laevigatus, H. sibogae, H. gibbosus, H. lepidus, H. dorsalis, H. tricarinatus and H. longirostris*). These shrimp are generally found at depths of 200 to 1,200 meters on the outer reef slopes that surround islands and deepwater banks. Species distribution tends to be stratified by depth with some overlap. The deepwater trap fisheries have primarily targeted *Heterocarpus ensifer* and *H. laevigatus*. Western Pacific commercial trap fisheries for deepwater shrimp are intermittent. There have been sporadic operations in Hawaii since the 1960s. The fisheries have been unregulated, and there has been no comprehensive collection of information about the fisheries. Most of these fishing ventures have been short-lived, probably as a result of sometimes-frequent loss of traps, a shrimp product with a short shelf life and history of inconsistent quality, and the rapid localized depletion of deepwater shrimp stocks leading to low catch rates.

Fishing for deepwater shrimp has been highly sporadic over the last several decades. In 1984, a total of 17 vessels reported catching approximately 159 tons of deepwater shrimp worth an estimated ex-vessel value of $780,000 across all western Pacific fisheries for *Heterocarpus*.

Hawaii landings have ranged from about 10,000 to 185,000 pounds between 1994 and 2009, with a mean of the years that fishing took place of about 56,200 pounds. Apart from one year (1997), production of deep water shrimps has been confined to the EEZ.

Figure 8. Landings of Kona crab in Hawaii 1994-2009, from State and Federal waters.
Source HDAR

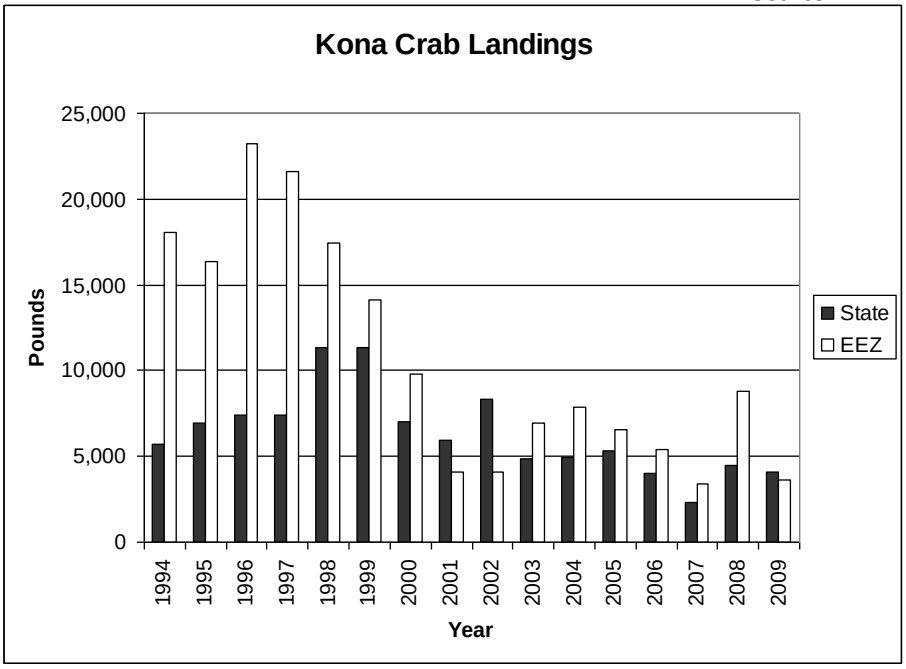


Figure 9. Landings of spiny lobster in Hawaii 1994-2009, from State and Federal waters.
Source HDAR

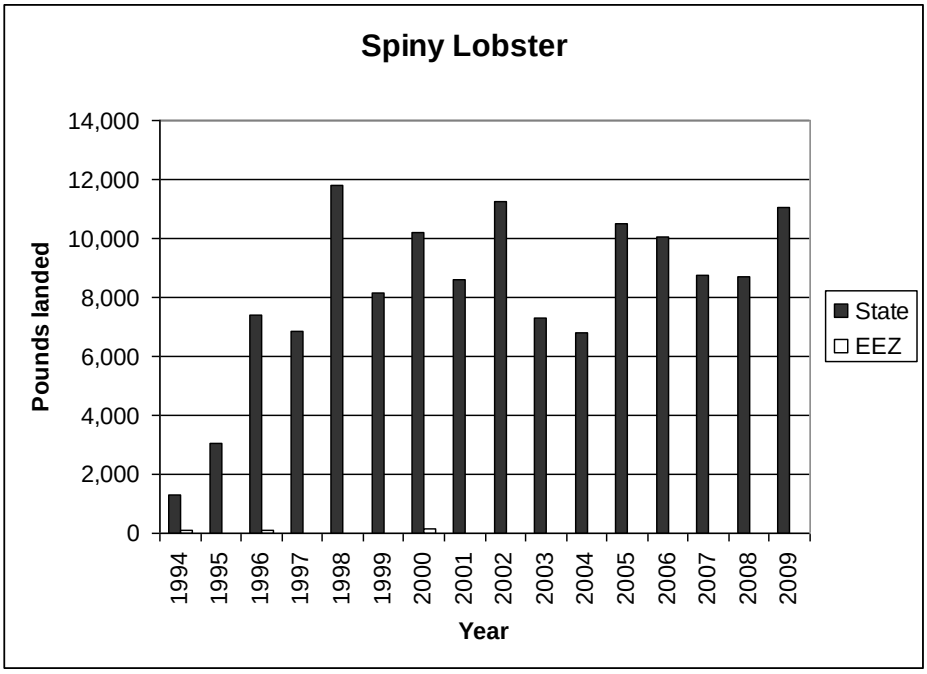
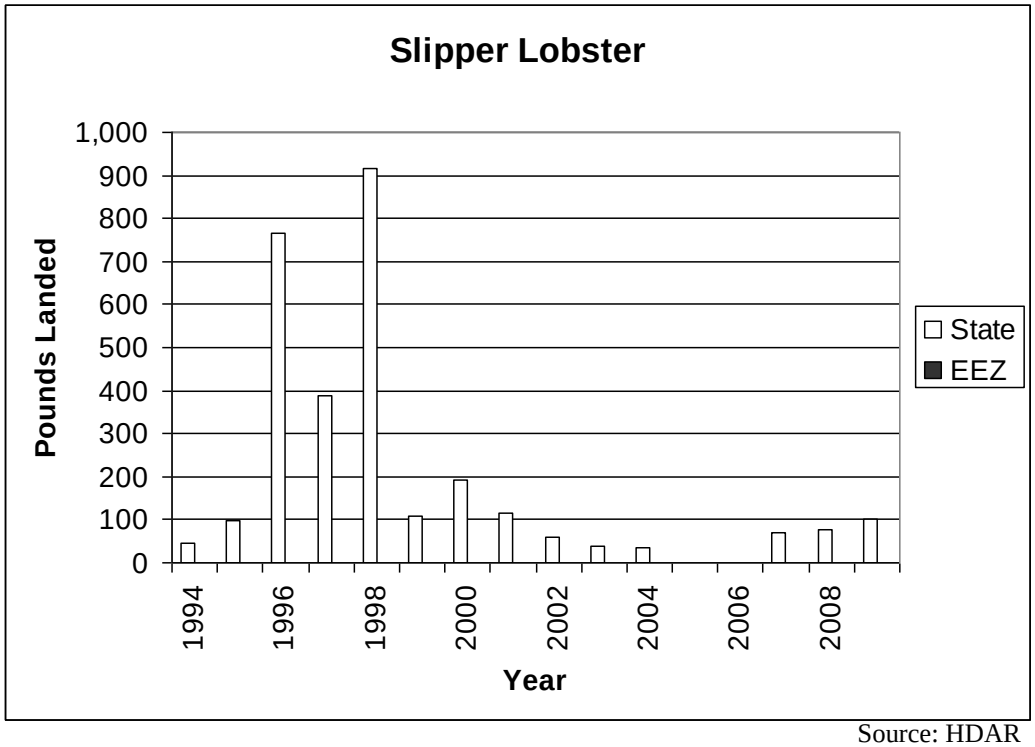


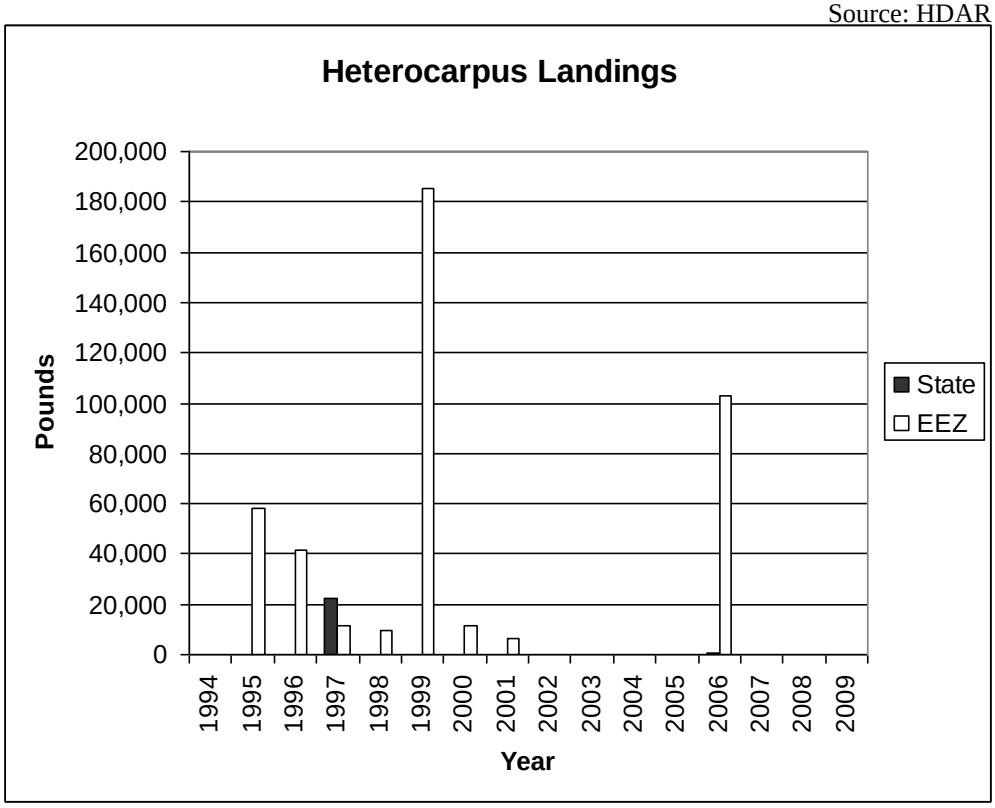
Figure 10. Landings of slipper lobster in Hawaii 1994-2009, from State and Federal waters.



Source: HDAR

Figure 11. Landings of deep water *Heterocarpus* shrimp in Hawaii 1994-2009, from State and Federal waters.

Source: HDAR



4.15.3.3 Description of the Hawaii Archipelago Precious Coral Fisheries

The following precious coral fishery description is summarized from the Hawaii Archipelago FEP (WPFMC 2009b). Source material for information and figures can be found in WPFMC 2009b; additional citations below are not found in WPFMC 2009b. The ongoing collection of black coral from depths of 30–100 meters by scuba divers has continued in Hawaii since the late 1950s, although harvest levels have fluctuated with changes in demand. Since 1980, virtually all of the black coral harvested around the Hawaiian Islands has been taken by hand from a bed located in the Auau Channel. Most of the harvest has come from State of Hawaii waters; however, a portion of the black coral bed in the Auau Channel is located in the EEZ. In 1999, concern about the potential for greater harvesting pressure on the black coral resources led the State of Hawaii to prohibit the harvest of black coral with a base diameter of less than 3/4 inches from state waters. Between 1990 and 1997, the annual harvest of black coral in Hawaii varied from a low of 864 pounds to a high of 6,017 pounds, with a yearly average of 3,084 pounds (Table 16). Landings and ex-vessel revenues of the black corals recently harvested in Hawaii cannot be presented due to the low number of active harvesting operations (less than three); however, current precious coral harvest is below MSY. For the years 1999-2005, the total harvest of black coral is between 52,000-55,000 pounds (Figure 12; WPFMC 2006) with average yearly landings of about 7,500 pounds (Figure 13; WPFMC 2006), which is below the 25% reduction on MSY described in Grigg (2004) (in WPFMC 2006). There has, however, been a doubling in landings from the prior 1992-1998 period attributed to increased demand, improved detailed bathymetric maps, and adoption of GPS (WPFMC 2006). There is no known recreational component to this fishery.

Figure 12. Summary of black coral landings from 1985-2005 (WPFMC 2006)

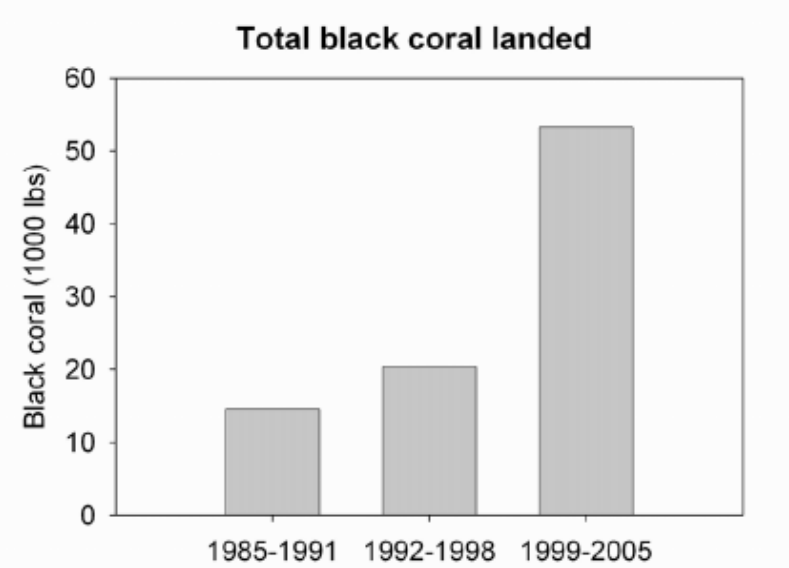
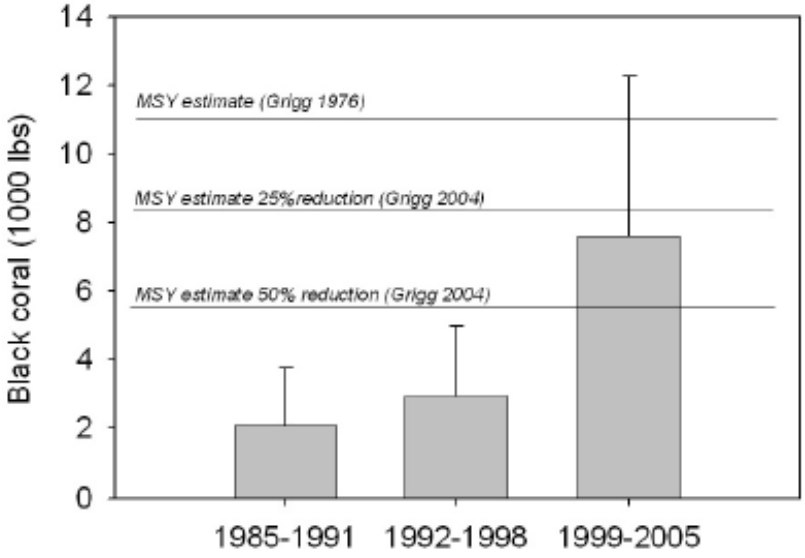


Figure 13. Mean annual black coral landings 1985-2005 (w/sd) (WPFMC 2008)



After two decades of minimal activity, the domestic fishery for pink, gold, and bamboo precious corals in the EEZ of Hawaii resumed in December 1999. One company used two one-man submersibles to survey and harvest pink and gold corals at depths between 400–500 meters during 1999 and 2001. However, they did not continue their operations after that time. As with black corals, actual harvests cannot be reported because there are less than three participants.

4.15.3.4 Description of the Hawaii Archipelago Coral Reef Ecosystem Fisheries

The following information is summarized from the Hawaii Archipelago FEP (WPFMC 2009b), where additional information and source material can be found. Coral reef taxa are currently harvested primarily in Hawaii State waters. No permits for collection of potentially-harvested coral reef taxa (PHCRT) in federal waters have yet been issued, thus there appears to be no fishery for PHCRT. Due to the establishment of the Papahanaumokuakea Marine National Monument, there are no active coral reef fisheries in the NWHI. The majority of the total commercial catch of inshore fishes, invertebrates, and seaweed comes from nearshore reef areas around the MHI; however, harvests of some currently-harvested coral reef taxa (CHCRT) also occur in federal waters (e.g., around Penguin Bank). As illustrated in Table 7, total catches of coral reef ecosystems species are dominated by bigeye scad and mackerel scad, and variations in their harvests have largely driven the downward trend observed in the 2000-2005 time period. Other species reported by commercial fishermen include surgeonfishes, goatfishes, squirrelfishes and parrotfishes.

In recent decades, there has been a reported decline in nearshore fishery resources in the MHI. Excessive fishing is considered to be one of the major causes of this decline. Coastal construction, sedimentation, and other effects of urbanization have also caused extensive damage to coral reefs and benthic habitat near the populated islands.

Because HDAR's catch forms use reporting grids that do not differentiate between state and federal waters, these data are for all (state and federal) waters surrounding the Hawaii Archipelago. Information on the number of fishery participants is unavailable. With the

exception of the FEP's special permit requirement, there are no reporting requirements for recreational and other non-commercial catches from waters around the Hawaii Archipelago, but creel surveys at Kaneohe, Hanalei, and Hilo Bays suggest that these catches are at least equivalent to the reported commercial catch, and may be two or three times greater. The majority of these catches is believed to be from State waters and would thus not be managed by the Hawaii Archipelago FEP; however, the ecosystem approach would warrant consideration of inshore fisheries and stocks as they interrelate with those in Federal waters.

Table 7. MHI Top Ten Catches of Coral Reef Associated Species 2000-2009

	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010
Bigeye scad (akule)	1,105,273	729,985	614,306	501,220	743,052	656,434	556,865	736,172	358,582	302,342	92,708
Mackerel scad	269,799	215,010	331,939	365,707	260,362	232,714	318,454	358,642	262,082	315,511	60,593
Surgeon/ tangs	98,625	118,841	133,517	124,251	95,138	94,495	74,622	86,659	84,652	88,695	19,045
Goatfish	40,220	43,122	68,061	64,239	69,556	42,034	41,990	35,398	39,432	54,551	13,857
Squirrelfish	38,548	52,235	53,650	47,154	41,059	37,928	27,988	37,709	62,279	53,599	12,633
Parrotfish	29,084	26,656	50,174	70,363	35,374	33,111	31,606	44,878	46,904	51,911	8,204
Octopus	23,736	28,985	27,698	26,336	23,115	24,244	21,085	18,308	30,000	30,355	3,576
Rudderfish	14,004	16,313	32,102	24,214	23,573	20,417	36,162	32,859	38,198	18,305	1,794
Pig-lipped ulua*	43,900	36,204	35,836	27,454	29,092	14,959	10,609	13,955	10,662	6,321	313
Invertebrates	12,780	19,050	11,813	7,697	15,149	11,668	3,410	4,869	9,457	177	83
Algae	10,680	16,882	9,570	13,410	16,864	10,399	7,456	6,654	10,908	11,489	1,661

Source: WPacFin, accessed March 2007 (cited from WPFMC 2009b for 2000-2005). WPacFin, accessed January 2011 for 2006-2009 (http://www.pifsc.noaa.gov/wpacfin/hi/dar/Pages/hi_data_4.php).
*Also known as butaguchi

4.15.4 Mariana Archipelago FEP

The descriptions of the bottomfish, crustaceans, precious corals, and coral reef ecosystem fisheries for Guam and CNMI are summarized from the Marianas Archipelago FEP (WPFMC 2009c), where additional information and source documents can be found. Additional citations throughout the text are not cited in WPFMC 2009c.

4.15.4.1 Description of the Bottomfish Fishery of the CNMI

The Commonwealth of the Northern Mariana Islands' (CNMI) bottomfish fishery occurs primarily around the islands and banks from Rota Island to Zealandia Bank north of Sarigan. However, the data are limited to the catches landed on Saipan, which is by far the largest market. Landings (in pounds) and revenues are inflated by 30% to represent the CNMI as a whole (assuming a 60% coverage of the commercial sales on Saipan and that Saipan is 90% of the market).

The fishery is characterized by data collected through the Commercial Purchase Database, which indirectly records actual landings by recording all local fish sales to commercial establishments. This data collection system is dependent upon voluntary participation by first-level purchasers of local fresh fish to accurately record all fish purchases by species categories on specially designed

invoices. Division of Fish and Wildlife (DFW) staff routinely collected and distributed invoice books to around 30 participating local fish purchasers in 2009, which included the majority of the fish markets, stores, restaurants, hotels, government agencies, and roadside vendors (fish-mobiles). A reduction in the number of participants in the previous years is due to the economic down-turn in CNMI that forced a number of vendors and businesses to close.

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

CNMI's bottomfish fishery still consists primarily of small-scale local boats engaged in local commercial and subsistence fishing, although a few (generally <5) larger vessels (30–60 ft) usually participate in the fishery. The bottomfishery can be broken down into two sectors: deep-water (>500 ft) and shallow-water (100–500 ft) fisheries. The deep-water fishery is primarily commercial, targeting snappers and groupers, including members of the snapper genus *Etelis* and *Pristipomoides,* and the eight-band grouper (*Epinephelus octofasciatus*).

The shallow-water fishery, which targets the redgill emperor (*Lethrinus rubrioperculatus*), is mostly commercial but also includes subsistence fishermen. These fishermen are taking not only bottomfish, but many reef fishes (especially snappers and groupers) as well. Hand lines, home-fabricated hand reels, and electric reels are the commonly used gear for small-scale fishing operations, whereas electric reels and hydraulics are the commonly used gear for the larger operations in this fishery. Historically, some trips have lasted for more than a day, but currently, effort is defined and calculated on a daily trip basis. Fishing trips are often restricted to daylight hours, with vessels presumed to return before or soon after sunset, unless fishing in the northern islands.

In terms of participation, the bottomfish fleet consists primarily of vessels less than 30 ft long that are usually limited to a 50-mi radius from Saipan. The larger commercial vessels that are able to fish extended trips and that focus their effort from Esmeralda Bank to Zealandia Bank are presumed to have landed the majority of the deep-water bottomfish reported on the purchase receipt forms.

Bottomfish fishing requires more technical skill than pelagic trolling, including knowledge of the location of specific bathymetric features. Presently, bottomfish fishing can still be described as "hit or miss" for most of the smaller (12–29 ft) vessels. Without fathometers or nautical charts, the majority of fishermen utilizing smaller vessels often rely on land features for guidance to a fishing area. This type of fishing is inefficient and usually results in a lower catch-per-unit-effort (CPUE) in comparison with pelagic trolling. These fishermen tend to make multi-purpose trips—

trolling on their way to reefs where they fish for shallow-water bottomfish and reef fish. Larger sized (30-ft and larger) vessels typically utilize Global Positioning System (GPS), fathometers, and electric reels, resulting in a more efficient operation. In addition, reef fishes are now commanding a consistently higher price than in previous years. This appears to be reflected in an increased number of fishermen using small vessels focusing on reef and/or pelagic species over bottomfishes.

Fishermen targeting the deep-water bottomfish, if successful, tend to fish for 1-4 years before leaving the fishery, whereas the majority of fishermen targeting shallow-water bottomfish tend to leave the fishery after the first year. The overall participation of fishermen in the bottomfishery tends to be very short term (less than 4 years). The slight difference between the shallow-water fishermen and the deep-water fishermen likely reflects the greater skill and investment required to participate in the deep-water bottomfish fishery. In addition, these tend to be larger ventures that are more buffered from the vagaries of an individual's choices and are usually dependent on a skilled captain/fisherman. Overall, the long-term commitment to hard work, maintenance and repairs, and staff retention appear to be difficult, if not impossible for CNMI bottomfishermen to sustain more than a few years. The time series of CNMI bottomfish catch is shown in Table 8.

Table 8. CNMI commercial landings (in pounds) of bottomfishes

year	btm	bmus	btm_s	btm_d	onaga	grpr_d	lehi	paka	gindai	ehu	kali
1983	28,529	3,407	10,762	2,748	1,118	1,363	0	2,022	267	0	0
1984	42,664	3,463	15,089	4,965	1,026	3,141	0	1,639	798	0	0
1985	40,975	2,223	12,855	5,535	1,117	4,210	0	681	208	0	0
1986	29,912	3,822	10,431	3,965	1,598	1,494	0	987	874	0	0
1987	49,715	1,889	16,176	1,464	472	721	0	1,146	271	0	0
1988	47,313	2,413	3,078	2,086	2,001	0	0	326	85	0	0
1989	24,438	4,021	3,963	4,046	2,478	563	0	538	1,006	0	0
1990	12,927	1,273	4,021	1,348	253	703	0	628	393	0	0
1991	7,093	781	1,387	804	175	629	0	606	0	0	0
1992	10,598	607	3,125	1,794	21	1,773	0	136	0	0	0
1993	18,461	1,722	8,537	1,971	593	1,146	0	898	232	0	0
1994	25,470	5,476	3,055	8,589	4,578	3,953	0	824	58	0	0
1995	36,102	17,736	5,043	19,261	14,910	2,715	521	1,019	1,114	0	0
1996	66,388	32,446	13,839	38,133	19,093	12,409	3,179	6,570	3,452	0	0
1997	64,144	22,133	29,452	27,913	16,631	9,086	1,375	2,780	821	0	0
1998	59,023	27,593	18,278	30,665	15,158	7,864	6,028	2,729	1,295	197	124
1999	55,991	34,648	11,464	35,750	17,351	3,901	9,986	1,772	3,686	821	6
2000	45,258	14,968	13,582	16,592	10,199	3,474	2,659	1,633	214	45	0
2001	71,256	25,264	21,195	28,625	16,358	7,719	2,585	3,951	1,916	8	0
2002	46,766	24,518	11,003	26,113	12,655	6,149	3,479	3,932	3,157	263	410
2003	41,904	17,988	13,567	19,549	6,649	4,906	1,624	2,262	2,550	729	3,090
2004	54,474	12,872	22,403	10,391	3,160	1,073	737	849	1,042	1,137	3,242
2005	70,398	15,780	28,339	14,615	2,625	3,152	1,293	1,317	2,495	1,324	3,725
2006	29,340	10,491	10,885	9,674	2,025	1,317	324	1,482	1,990	989	3,005
2007	39,477	16,160	19,384	11,507	1,755	1,857	695	2,288	3,188	2,212	1,799
2008	42,073	16,965	17,716	12,398	2,620	2,932	640	4,013	2,461	1,911	1,832
2009	**37,916**	**18,009**	**16,846**	**12,685**	**3,517**	**768**	**1,042**	**3,898**	**2,393**	**2,572**	**2,393**

btm: Total bottomfish; bmus: Total bmus: BMUS species; btm_s: All shallow-water bottomfishes; btm_d: All deep-water bottomfishes; onaga: Onaga; grpr_d: Grouper; lehi: Silvermouth; paka: Opakapaka; gindai: Gindai; ehu: Ehu; and kali: Kalikali

Source: DAW, Saipan

4.15.4.2 Description of the Bottomfish Fishery of Guam

The bottomfish catches on Guam from 1982 to 2008 are shown in Table 9. There are two distinct bottomfish fisheries on Guam that can be separated by depth and species composition. The shallow water complex (< 500 feet) makes up a larger portion of the total bottomfish effort and harvest. Catch composition of the shallow-bottomfish complex (or coral reef species) is dominated by lethrinids. Other important components of the bottomfish catch include lutjanids, carangids, serranids, and sharks. Holocentrids, mullids, labrids, scombrids, and balistids are minor components. It should be noted that at least two of these species (*Aprion virescens* and *Caranx lugubris*) also range into deeper water and some of the catch of these species occurs in the deepwater fishery. The deepwater complex (> 500 feet) consists primarily of groupers and snappers of the genera *Pristipomoides, Etelis, Aphareus, Epinephelus,* and *Cephalopholis*.

Bottomfish fishing on Guam is a combination of recreational, subsistence, and small-scale commercial fishing. The majority of the participants in the bottomfish fishery operate vessels less than 25 feet long and primarily target the shallow-water bottomfish complex. The commercially-oriented highliner vessels are generally longer than 25 feet, and their effort is usually concentrated on the deep-water bottomfish complex.

Guam's bottomfish fishery can be highly seasonal, with effort significantly increasing when sea conditions are calm, generally during the summer months. During these periods, bottomfish fishing activity increases substantially on the offshore banks (in federal waters), as well as on the east side of the island (in territorial waters), a more productive fishing area that is inaccessible to small boats during most of the year due to rough seas.

Less than 20% of the total shallow-water marine resources harvested in Guam are taken outside 3 miles, primarily because the offshore banks are less accessible. Most offshore banks are deep, remote, subject to strong currents, and have high shark densities. Galvez Bank is the closest and most accessible and, consequently, fished most often. In contrast, the other banks (White Tuna, Santa Rose, Rota) are remote and can only be fished during exceptionally good weather conditions. The banks are fished using two methods: bottomfishing by hook-and-line and jigging at night for bigeye scad (*Selar crumenophthalmus*).

Charter fishing has been a substantial component of the fishery since 1995, accounting for about 15–20% of all bottomfish fishing trips from 1995 through 2004; however, charter harvest is a small proportion of the fishery, with harvest less than a half of 1% overall, less than 0.05% of the harvest of jacks and snappers, and less than 2% of the harvest of groupers and emperors. The boat-based charter harvest increased 27% in 2008 (455 pounds from 357 pounds; WPFMC 2008d). Larger vessels consistently fish in the same general area and release most of their catch, primarily small triggerfish, small groupers, and small goatfish. They occasionally keep larger fish and use a portion of the catch to serve as sashimi for their guests.

Table 9. Harvest of All Bottomfish Species (in pounds) for 1982-2008 in Guam.

Year	Total	Shore-Based	Boat-Based	Non-Charter	Charter
1982	24,520		24,520	24,520	
1983	38,915		38,915	38,915	
1984	16,626		16,626	16,626	
1985	46,923	34	46,889	46,744	146
1986	19,490	199	19,291	17,919	1,372
1987	28,384	64	28,320	28,320	
1988	44,507	1,368	43,139	42,778	361
1989	57,813	65	57,748	57,251	497
1990	42,654	1,541	41,113	40,955	159
1991	38,706	1,102	37,604	37,278	326
1992	51,467	1,862	49,605	49,125	480
1993	53,895	586	53,309	52,987	322
1994	48,317	245	48,072	47,768	304
1995	41,122	764	40,358	37,917	2,441
1996	53,205	1,154	52,051	49,794	2,257
1997	30,461	417	30,044	28,772	1,272
1998	37,139	187	36,952	34,724	2,228
1999	52,830	50	52,780	49,544	3,236
2000	66,434	576	65,858	64,428	1,431
2001	50,587	170	50,417	49,693	724
2002	25,783	1,906	23,877	22,613	1,264
2003	42,813	171	42,642	41,995	648
2004	37,185	311	36,874	36,511	363
2005	36,691	68	36,623	35,948	675
2006	38,088	245	37,843	37,531	312
2007	26,721	117	26,604	26,427	176
2008	**37,482**	**95**	**37,387**	**37,249**	**139**

Source: DAWR, Guam

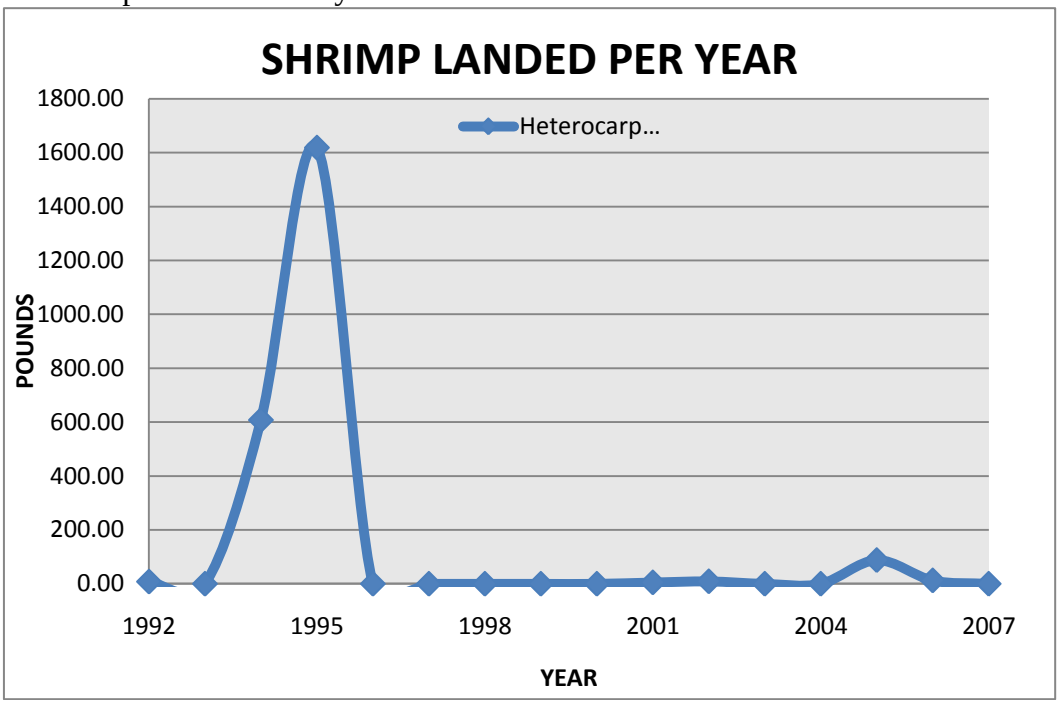
4.15.4.3 Description of the Crustacean Fishery of the CNMI

Lobsters around CNMI do not appear to go into traps and have not been found in waters deeper than 13 meters. The CNMI fishery primarily targets spiny lobster in nearshore waters with reported catches taken almost exclusively within the 0-3 nmi zone of the inhabited southern islands by hand harvesters with scuba or free diving. Beyond 3 nmi, the topography in most locations drops off steeply. These lobster habitats are relatively small and difficult to access.

Anecdotal information indicates that in the northern islands on the reef surrounding FDM, bottomfish fishermen that have anchored for the night occasionally dive for lobsters. Anchoring and diving at Farallon de Mendinilla (FDM) is primarily for personal consumption and occurs exclusively within 3 nmi.

A deepwater shrimp trap fishery was undertaken by two companies in the 1990s mostly around Saipan and Tinian on flat areas near steep banks at depths greater than 350 meters. While three species of pandalid shrimp are known to occur at varying depths in the waters around CNMI (*Heterocarpus ensifer* (366–550 m), *Heterocarpus laevigatus* (550–915 m), and *Heterocarpus longirostris* (> 915 m)), the most commercially valuable and subsequently targeted is the largest species, *Heterocarpus laevigatus*. Based on the graph below, shrimp is a pulse fishery that has not had any significant landings since 1995 (Figure 14). No landings have been reported since 2006.

Figure 14. Shrimp landed annually in CNMI.



Source: DFW Commercial Purchase Database

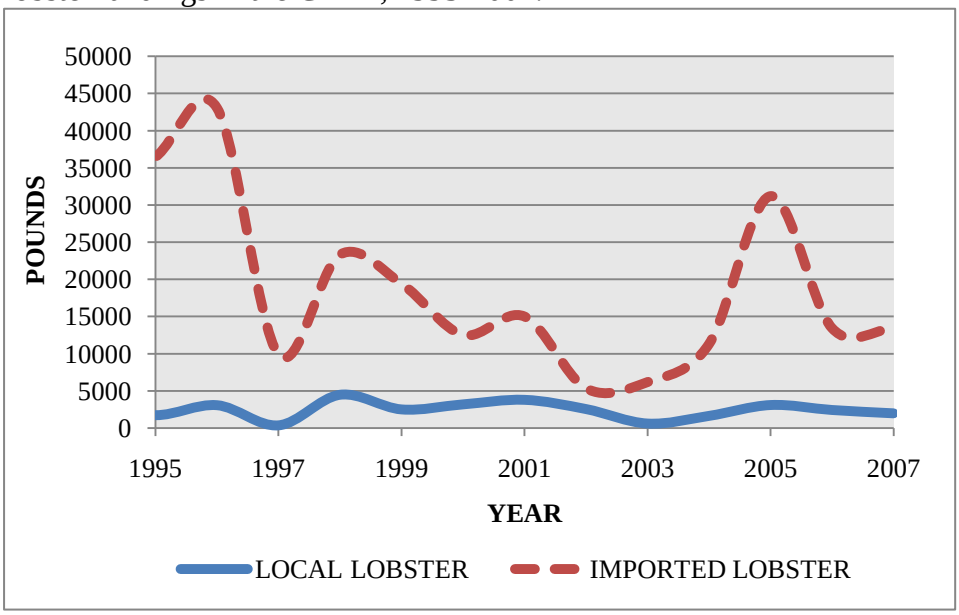
One CNMI company stopped fishing in 1995, citing loss of gear as the reason for exiting the fishery. The second company began in December 1995 and had fished 20 days by March 1996 when non-Commercial Purchase Database (CPD) data collection ceased. The second company experienced no trap losses in 61 sets and 1561 traps deployed. Strong currents, rough bottom topography, and the fishing depth all contribute to the potential for gear loss, which has been experienced by this fishery in the past. Throughout the Pacific, deep-water shrimp fisheries have been sporadic in nature due to gear loss, short shelf life and inconsistent quality, and local depletion. While other banks might have abundant stocks, unfamiliarity with them could lead to even greater gear loss.

Shrimp trapping was conducted at 22 islands and banks during the Resource Assessment Investigation of the Mariana Archipelago (RAIOMA) cruises in the early 1980s. Depth and area distribution were observed for the three major species of pandalid shrimp. Average size, size at maturity, reproductive cycles, and sex ratios were analyzed and determined. Growth and mortality were also calculated. From analysis of catch per unit effort, determination of suitable habitat and the above parameters, total biomass and sustainable yield were calculated. There is an estimated 676.6 tons of *Heterocarpus laevigatus* biomass and an exploitable sustainable yield of 162 tons (>357,000 pounds) per year for the combined EEZ waters around Guam and CNMI.

The CNMI Division of Fish and Wildlife (DFW) conducted a data collection project specifically for the deepwater shrimp fishery between May of 1994 and June of 1995. Catch and effort data was gathered for both types of traps, as well as bycatch data. Depth ranges for the fishery and depth of greatest abundance were recorded, and sex ratios and reproductive cycles were determined.

CNMI's commercial lobster fishery is small, with 2,948 pounds of commercial landings in 2004 worth an estimated $19,408. The catch for 2007, 2008, and 2009 was 1955 pounds, 1468 pounds, and 484 pounds, respectively, with the price dropping per pound every year from $5.31 in 2007 to $4.98 in 2009. Based on the graph below (Figure 15), clearly more lobster is imported than landed locally every year. Landings have always been below 5000 pounds.

Figure 15. Lobster landings in the CNMI, 1995-2007.



Source: DFW Commercial Purchase Database

4.15.4.4 Description of the Crustacean Fishery of Guam

Little is known about Guam's crustacean fisheries. Fishing for crustaceans around Guam mostly occurs in inshore territorial waters, usually in a subsistence or recreational context. It is estimated that a total of 1,159 and 1,240 pounds of lobsters were harvested in 2008 and 2009 (http://www.pifsc.noaa.gov/wpacfin/guam/dawr/Pages/gdawr_data_3.php), respectively, with a value of $4,299-4,585. There is no deepwater shrimp fishery in Guam.

4.15.4.5 Description of the Precious Coral Fishery of the CNMI

Little is known about the presence of precious corals in the waters around CNMI. The amount of habitat where precious corals can grow is limited throughout the archipelago because of the steep bathymetry. Black coral grows in relatively shallow waters of 30–100 meters, while pink, gold, and bamboo coral grows in deeper waters of 300 to 1,500 meters. Thus, precious corals could theoretically exist in both the nearshore waters (0–3 nmi) as well as in the offshore (3–200 nmi) waters.

Reports of a fishery from pre–World War II suggest that large quantities of high-quality *Corallium* spp. were taken in waters north of Pagan Island. Since then, no known precious coral harvests have occurred within EEZ waters around CNMI.

4.15.4.6 Description of the Precious Coral Fishery of Guam

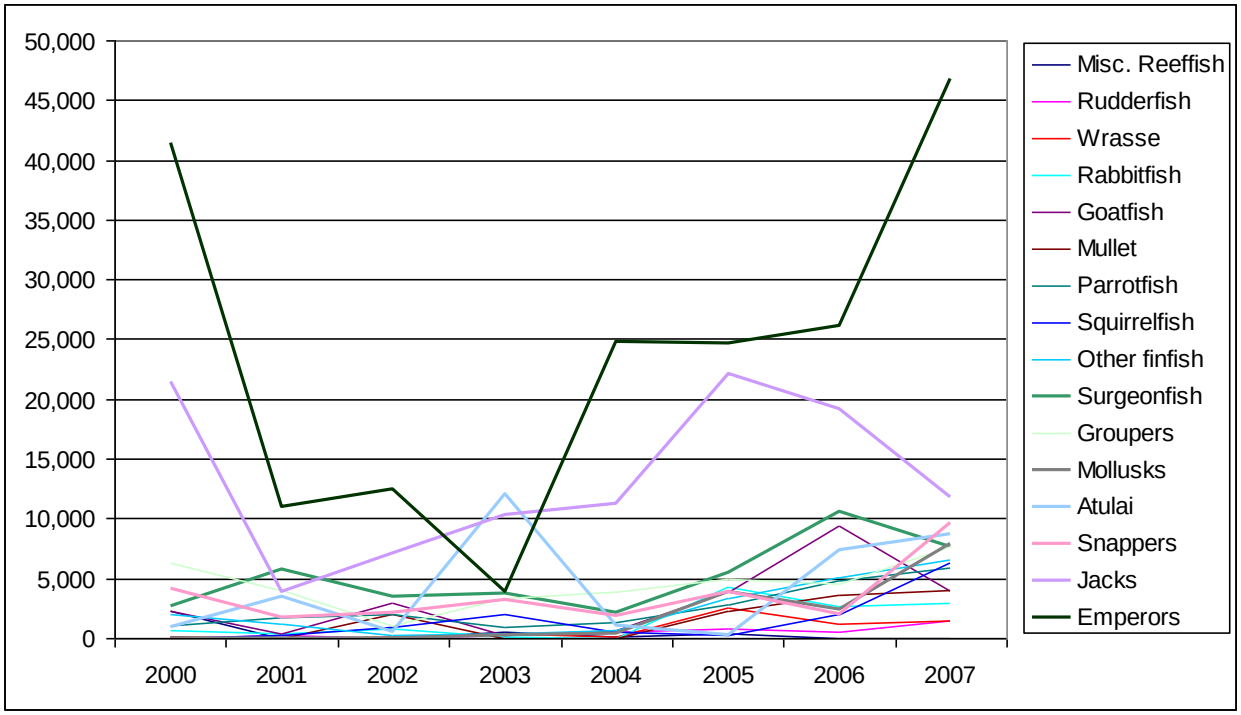
During the 1970s, waters surrounding Guam were surveyed for precious coral. The study focused on the presence of pink and red corals (*Corallium* spp.) and black coral (*Antipathes* spp.). Very little precious coral resources were found in these surveys. There is no precious coral fishery currently operating around Guam, nor have there been any reported; there are no observed landings of precious corals harvests from the EEZ around Guam.

There is sufficient domestic processing capacity to accommodate harvest. The U.S. imports semi-processed coral for finishing into jewelry. Under the FEP, domestic production could replace these imports.

4.15.4.7 Description of the Coral Reef Ecosystem Fishery of the CNMI

It is difficult to assess the total harvest of present-day coral reef fisheries in CNMI because of shortcomings in fisheries statistics. Coral reef fisheries in CNMI are mostly limited to nearshore areas, especially off the islands of Saipan, Rota, and Tinian. Finfish and invertebrates are the primary targets, but small quantities of seaweed are also taken. All of the recent data are for commercial landings. Commercial landings of coral reef fish were approximately 132,777 pounds in 2007, the majority of which were emperors, jacks, snappers, and atulai (Figure 16). Harvests of topshell (*Holothuria whitmaei*) are subject to closed seasons. Generally, coral reef fisheries in CNMI are believed to be in good condition, but local depletion likely occurs in some areas of Saipan.

Figure 16. CNMI commercial reef fish landings by species group for 2000-2007



Virtually no recent information is available for inshore subsistence and recreational catches of coral reef resources. This harvest is assumed to be substantial, especially in the more accessible areas like Saipan Lagoon. CNMI DFW is now reestablishing the inshore creel survey program at Saipan Lagoon to obtain this information. Also, little is known of the coral reef fisheries in the northern islands of CNMI, but the catch by domestic fishermen is believed to be minor. The exception was in 1995, when the nearshore reefs around six of the northern islands (especially Anatahan and Sarigan) were fished commercially for several months. During that time, these areas yielded a harvest of 15 metric tons of reef fish and 380 pieces of spiny lobster. Poaching by foreign fishing boats may occur in some places.

4.15.4.8 Description of the Coral Reef Ecosystem Fishery of Guam

Prior to the Second World War, inshore fishing was the subsistence base of the native Chamorros on Guam. All catch reports were of reef-associated species until 1956, when a pelagic species was included. Post–World War II wage work enabled some fishermen to acquire small boats with outboard engines and other equipment for offshore fishing. However, even as late as the 1970s, few people in Guam fished offshore because boats and deep-sea fishing equipment were too expensive.

In the late 1970s, a group of Vietnamese refugees living on Guam fished commercially on a large scale. The Guam Fishermen's Cooperative Association also began operations during that time, emphasizing wholesaling. Today, the co-op's membership includes over 160 full-time and part-time fishermen, and it processes and markets (retail and wholesale) an estimated 80 percent of the local commercial catch.

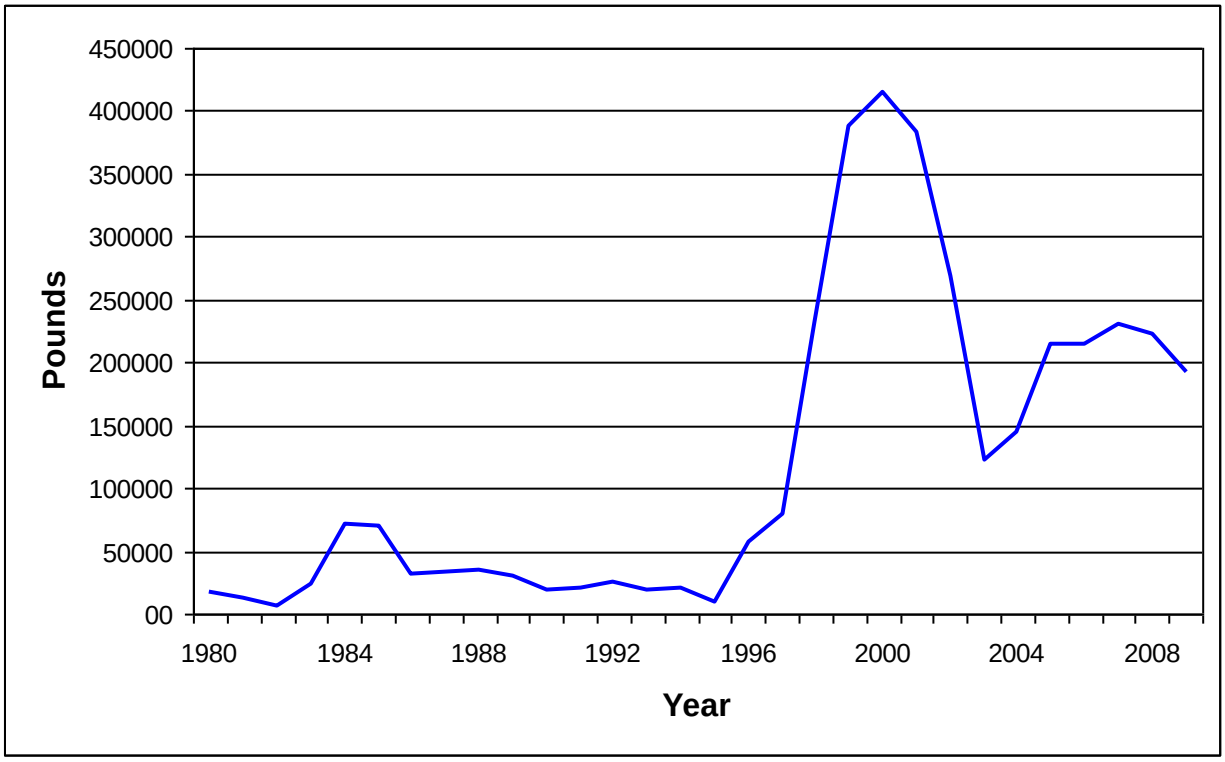
Since the late 1970s, the percentage of live coral cover on Guam's reefs and the recruitment of small corals has decreased. This trend has been attributed to poor recruitment by coral larvae, increased sedimentation of reef habitat, and domination of reef habitat by fleshy algae. Corals have also been affected by natural disturbances. Pervasive events include starfish predation between 1968 and 1970 and exposure of corals due to extreme tides during El Niño events. Heavy wave action associated with typhoons has had more localized effects.

Shore-based fishing accounts for most of the fish and invertebrate harvest from coral reefs around Guam. The coral reef fishery harvests more than 100 species of fish. Species from seven families (Acanthuridae, Mullidae, Siganidae, Carangidae, Mugilidae, Lethrinidae, and Scaridae) were consistently among the top ten species harvested in any given year from fiscal year 1991 to fiscal year 1995 and accounted for 45 percent of the annual fish harvest. Approximately 40 taxa of invertebrates are harvested by the nearshore fishery, including 12 crustacean taxa, 24 mollusc taxa, and four echinoderm taxa. Species that became rare on shallow reefs due to heavy fishing include bumphead parrotfish (*Bolbometopon muricatum*), humphead wrasse (*Cheilinus undulatus*), stingrays, parrotfish, jacks, emperors, and groupers.

Virtually no information exists on the condition of the reefs on offshore banks. On the basis of anecdotal information, most of the offshore banks are in good condition because of their isolation. Less than 20 percent of the total coral reef resources harvested in Guam are taken from the EEZ, primarily because the offshore banks are less accessible. Finfish make up most of the catch in the EEZ. Most offshore banks are deep, remote and subject to strong currents. For more information about the offshore banks and finfish caught there, see section 4.15.4.2.

Total coral reef fish landings for Guam in 2008 and 2009 were estimated at 221,892 pounds and 192,586 pounds (WPacFin; Figure 17), respectively, of which approximately 2 percent was bigeye scad. The majority of bigeye scad fishing occurs on the offshore banks in territorial waters, but also occasionally takes place in federal waters. Estimated annual offshore landings for this species since 1980 have ranged from 542 to 27,551 pounds (WPacFin), with no apparent trend; catches since 2002 have not exceeded 5,300 pounds and was 4,513 in 2009 (WPacFin). It is unclear how much of the offshore bigeye scad fishery has occurred in the EEZ.

Figure 17. Coral reef commercial landings for Guam, 1980-2008



Source: WPacFin

4.15.5 Pacific Remote Island Areas FEP

4.15.5.1 Description of the PRIA Bottomfish Fishery

The information here is summarized from the PRIA FEP (WPFMC 2009d), where source material and additional information can be found. While there are currently no known bottomfish fisheries operating in the PRIA, several vessels have been known to occasionally fish for bottomfish in federal waters around the PRIA. Low levels of commercial fishing have occurred at Palmyra Atoll and Kingman Reef; recreational fishing is offered at Palmyra through the Nature Conservancy. Hawai`i troll and handline vessels have, in the late 1990s, fished the EEZ waters around Palmyra and Kingman Reef targeting both pelagic and bottomfish species, including deep slope snappers, yellowfin and bigeye tuna, wahoo, mahimahi, and sharks. In 2006 and 2007, several PRIA troll/handline/bottomfish fishing permits were issued by NMFS, however, to date only one has been used. The catch and operations of this vessel cannot be revealed due to confidentiality requirements. However, over the last 20 years, only 19,095 pounds of non-pelagic fishes (including coral reef species, bottomfish, and crustaceans) have been removed from the PRIAs. Also, harvest from the PRIAs will be impacted by the implementation of the PRIA Marine National Monument, which restricts fishing to only subsistence and sustenance fishing out to 50 miles offshore; additionally, the Council recently recommended a fishery closure from the shoreline to 12 miles offshore, which NMFS is currently reviewing.

Very little bottomfish research has been conducted in the PRIA to date. Research cruises to Howland, Baker, and Jarvis Islands and to Palmyra Atoll and Kingman Reef were conducted in

2000-2004 to develop baseline assessements and perform monitoring on coral reef ecosystems. These continuing investigations are focusing on the status of the shallow-water habitat including percentage 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 that of many of the commercially valuable snappers, is still largely undescribed .

4.15.5.2 Description of the PRIA Crustacean Fishery

The information here is summarized from the Pacific Remote Islands Area FEP (WPFMC 2009d), where source material and additional information can be found. While there are currently no known crustacean fisheries operating in the PRIA, several vessels have been known to fish for crustaceans in federal waters on a small scale. At least two fishermen have attempted fishing for lobster in the PRIA. In 1999, one vessel explored the lobster fishery in Palmyra/Kingman waters. However, tropical lobsters (green spiny, *P. penicillatus*) are not harvestable with traps – no lobsters were caught in 800 traps. The fishermen caught 20 lobsters when diving on the reef, thus were not very successful. In addition, this vessel deployed traps at 300–800 meters to target deep-water shrimp and red crab around Palmyra and Kingman. Although there is a danger of losing gear when setting this deep, the operation did not lose many traps, and the catch-per-unit effort (CPUE) was very high, at approximately 30 kg/trap. However, over the last 20 years, only 19,095 pounds of non-pelagic fish (coral reef, bottomfish, and crustaceans) have been removed from the PRIAs. Also, harvest from the PRIAs will be impacted by the implementation of the PRIA Marine National Monument, which restricts fishing to only subsistence and sustenance fishing out to 50 miles offshore; additionally, the Council recently recommended a fishery closure from the shoreline to 12 miles offshore, which NMFS is currently reviewing.

There is virtually no research data regarding crustaceans in the PRIA. Detailed fishery data have been collected by the vessel mentioned above, which fished for deep-water shrimp around Palmyra in 1999.

4.15.5.3 Description of the PRIA Precious Coral Fishery

The information here is summarized from the PRIA FEP (WPFMC 2009d), where source material and additional information can be found. No precious corals harvester has received a federal permit to harvest corals from the EEZ surrounding the PRIA since the implementation of the Precious Corals FMP in 1980; however, this does not preclude any future permit issuance. The U.S. EEZ surrounding the PRIA has been defined, for the purposes of precious coral fisheries management, as an Exploratory Precious Coral Permit Area. There is a 1,000 kg quota limiting the amount of precious corals that may be taken in any precious corals permit area in EEZ waters around the PRIA during a fishing year, all species combined (except black corals). Only selective gear may be used to harvest precious corals and minimum sizes apply. Also, harvest from the PRIAs will be impacted by the implementation of the PRIA Marine National Monument, which restricts fishing to only subsistence and sustenance fishing out to 50 miles offshore; additionally, the Council recently recommended a fishery closure from the shoreline to 12 miles offshore, which NMFS is currently reviewing.

There are no known extensive precious coral beds in the PRIA nor are there known harvests of precious corals in the PRIA at this time, however, it is possible a future fishery may develop.

4.15.5.4 Description of the PRIA Coral Reef Ecosystem Fishery

The information here is summarized from the Pacific Remote Islands Area FEP (WPFMC 2009d), where source material and additional information can be found. No domestic coral reef fishery has ever occurred at Howland, Baker, Jarvis, or Kingman Reefs. Recreational fishing for bonefish has occurred at Palmyra through the Nature Conservancy and the USFWS; however, catch statistics are unavailable. No information is available on coral reef catches at Wake Island or Johnston Atoll. However, over the last 20 years, only 19,095 pounds of non-pelagic fish (coral reef species, bottomfish, and crustaceans) are reported to have been removed from the PRIAs. Also, harvest from the PRIAs will be impacted by the implementation of the PRIA Marine National Monument, which restricts fishing to non-commercial fishing out to 50 miles offshore; additionally, the Council recently recommended a fishery closure from the shoreline to 12 miles offshore, which NMFS is currently reviewing.

4.15.6 Pacific Pelagic FEP

4.15.6.1 Description of the Pelagic Fisheries

The Pelagics FEP is the management plan for regulating pelagic fisheries throughout the jurisdiction of the Council, including American Samoa, PRIAs, the Mariana archipelago, and the Hawaii archipelago, as well as on the high seas.

A summary of the total pelagic landings during 2008 and 2009 in the western Pacific and the percentage of each species landings compared to total pelagic landings are shown in Table 10 and 11, respectively.

Table 10. Total pelagic landings in pounds in the western Pacific region in 2008

Species	American Samoa	Guam	CNMI	Hawai`i	Total	% Total
Swordfish	14,889			4,303,000	4,317,889	10.7
Blue marlin	76,286	9,705	1,098	1,142,000	1,229,089	3.0
Striped marlin	1,582			1,023,000	1,024,582	2.5
Other billfish	3,751	283		567,000	571,034	1.4
Mahimahi	27,798	111,811	11,169	1,416,000	1,566,778	3.9
Wahoo	298,246	98,345	1,388	964,000	1,361,979	3.4
Opah (moonfish)	5,334			1,335,000	1,340,334	3.3
Sharks (whole weight)	1,300	497		416,000	417,797	1.0
Albacore tuna	7,804,550			873,000	7,677,550	19.0
Bigeye tuna	273,901			13,511,000	13,784,901	34.1
Bluefin Tuna				2,000	2,000	0.0
Skipjack tuna	358,700	295,250	157,708	1,266,000	2,077,658	5.1
Yellowfin tuna	741,123	19,887	16,344	3,478,000	4,255,354	10.5
Other pelagics	2,148	14,302	9,306	1,194,000	1,219,756	3.0
Total	9,609,608	550,080	197,013	31,490,000	40,446,701	

Note: Total Pelagic Landings are based on commercial reports and/or creel surveys. “Other pelagics” includes Dogtooth Tuna, Rainbow Runner, Barracudas, Kawakawa, Pomfrets, Oilfish, and miscellaneous pelagic fish categories

Table 11. Total pelagic landings (PMUS only) in pounds in the Western Pacific Region in 2009

Species	American Samoa	Guam	CNMI	Hawai`i	Total	% Total
Swordfish	27,361	0	0	3,975,000	4,002,361	14.3
Blue marlin	91,753	32,605	47	1,154,000	1,278,405	4.6
Striped marlin	7,981	0	0	644,000	651,981	2.3
Other billfish	11,079	904	162	296,000	308,145	1.1
Mahimahi	36,933	146,649	19,580	1,464,000	1,667,162	5.9
Wahoo	303,960	130,733	3,389	751,000	1,189,082	4.2
Opah (moonfish)	6,402	0	0	1,896,000	1,902,402	6.8
Oilfish	6,171	61	0	544,000	550,232	2.0
Pomfret	1,241	430	511	628,000	630,182	2.2
Sharks (whole weight)	2,473	0	0	373,000	375,473	1.3
Albacore tuna	8,604,024	0	0	678,000	9,282,024	33.1
Bigeye tuna	351,509	0	0	10,753,000	11,104,509	39.6
Bluefin Tuna	0	0	0	2,000	2,000	0.0
Skipjack tuna	344,410	331,063	129,176	1,098,000	1,902,649	6.8
Yellowfin tuna	867,571	50,279	25,113	2,844,000	3,786,963	13.5
Other pelagics	203	3,172	1,521	46,000	50,896	0.2
Totals		695,896	179,498	27,148,000	28,023,394	

4.15.6.1.1 American Samoa-based Pelagic Fisheries

The following two paragraphs are summarized from the report evaluating impacts of the September 2009 tsunami on the American Samoa fishing community and fishery (WPFMC 2010), where source material and additional information can be found. Subsistence fishing continues to the present, but the importance of pelagic fisheries as a source of income and employment is increasing. In 1995, small-scale longline fishing began in American Samoa. Commercial ventures are diverse, ranging from small-scale vessels having very limited range to large-scale vessels catching tuna in the EEZ and distant waters, and delivering their catches to canneries based in American Samoa. Currently the pelagic fisheries of American Samoa are based on supplying fresh or frozen albacore directly to a large tuna cannery in Pago Pago. These fisheries include small and large-scale longlining; a pelagic trolling and handline fishery; distant water purse seine fishery; and distant water jig albacore fishery.

In 2001 and 2002, American Samoa's active longline fleet increased from 21 mostly small alia to 75 vessels of a variety of sizes; American Samoans mostly own small vessels and non-American Samoans mostly own large vessels (WPFMC 2003). The rapid expansion of longline fishing effort within the EEZ waters around American Samoa prompted the Council to develop a limited entry system for the American Samoa pelagic longline fishery in which 60 permits were initially approved and issued by NMFS; this has been set as the cap.

Unpublished data prepared for the 2009 pelagics annual report showed that over 10.6 million pounds (Table 12) of pelagic species is estimated to have been landed by American Samoa vessels during 2009. This is an increase of about 1.0 million pounds from the 2008 landings. Tuna species account for about 94% of the total landings; albacore dominates (85%) tuna

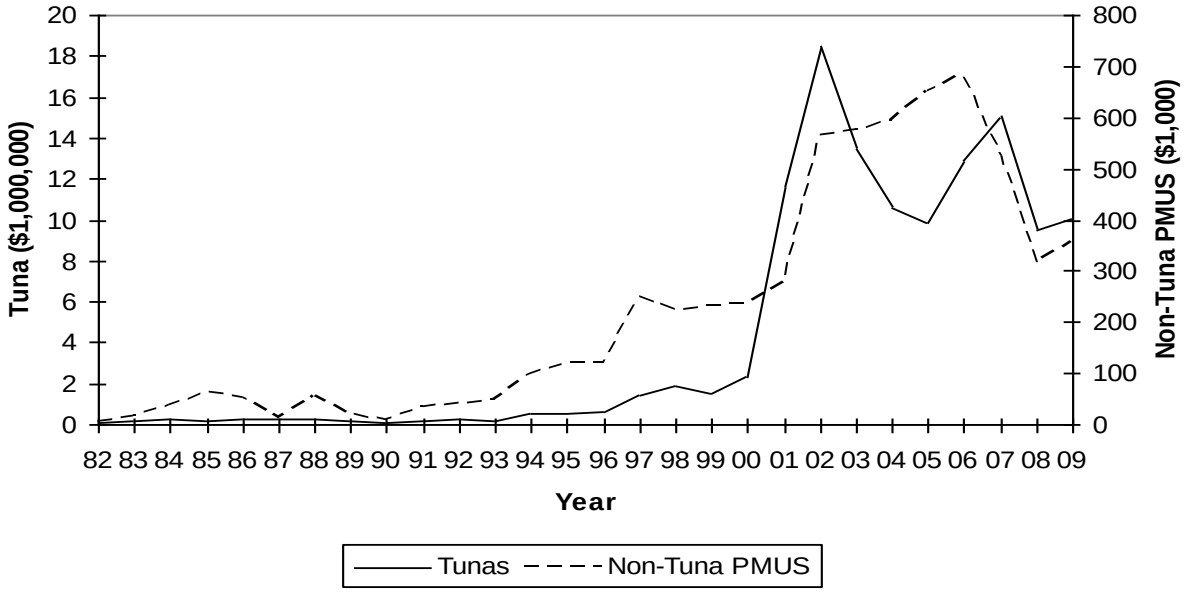
landings, followed by yellowfin (8%), bigeye (3.4%), and (3.3%) skipjack tunas. Tuna landings account for 80% percent of the total pelagic landings. Albacore landings in 2009 increased (10%) to about 8.6 million pounds from about 7.8 million in 2008. Non tuna and other pelagic species total about 500,000 pounds. Wahoo dominates (61%) the non tuna landings, and barracudas dominate the other pelagics. Of the total landings, commercial landings account for about 10.5 million pounds. Longline vessels over 50 feet dominate the American Samoa pelagic landings.

Table 12. American Samoa 2009 estimated total landings by pelagic species by gear type.

Species	LongLine Pounds	Troll Pounds	Other Pounds	Total Pounds
Skipjack tuna	341,829	2,582	0	344,410
Albacore tuna	8,604,024	0	0	8,604,024
Yellowfin tuna	865,012	2,560	0	867,571
Kawakawa	0	5	0	5
Bigeye tuna	351,509	0	0	351,509
Tunas (unknown)	198	0	0	198
TUNAS SUBTOTALS	10,162,572	5,146	0	10,167,717
Mahimahi	36,763	113	57	36,933
Black marlin	225	0	0	225
Blue marlin	91,753	0	0	91,753
Striped marlin	7,981	0	0	7,981
Wahoo	303,960	0	0	303,960
Sharks (all)	2,405	0	68	2,473
Swordfish	27,361	0	0	27,361
Sailfish	4,184	0	0	4,184
Spearfish	6,670	0	0	6,670
Moonfish	6,322	0	80	6,402
Oilfish	6,171	0	0	6,171
Pomfret	1,241	0	0	1,241
NON-TUNA PMUS SUBTOTALS	495,035	113	205	495,353
Barracudas	500	41	3,927	4,467
Rainbow runner	48	14	304	366
Dogtooth tuna	0	14	626	641
Pelagic fishes (unknown)	529	0	0	529
OTHER PELAGICS SUBTOTALS	1,077	69	4,857	6,003
TOTAL PELAGICS	**10,658,683**	**5,328**	**5,062**	**10,669,073**

Longline effort indicators – sets, hooks, trips – decreased in 2009 compared to 2008; the number of longline vessels decreased by two. The number of fishing trips decreased by 55% in 2009, but hours fished increased. About $10.36 million is recorded for 2009 from all pelagic species, an increase of 5% from 2008. Tuna sales are estimated at $10.1 million, which is 96% of the total value of $10.5 million (Figure 18). Albacore revenue was $8.6 million with an average price of $1/lb, accounting for 82% of the total commercial value.

Figure 18. American Samoa annual inflation-adjusted revenue ($) through 2009 for tuna and non-tuna species.



Longline fishing by large monohull vessels (>50ft) continues to dominate American Samoa's pelagic fishery. The alia longline fleet remains at one boat through the last three years. In September 2009, one of the two canneries in American Samoa shut down; however, data shows that the 2009 landings increase compared to 2008. Fishing effort and the number of fishing boats decreased, but the total landings were higher in 2009 than in 2008. Therefore, the closure of the Chicken of the Sea cannery appears to have had no negative impact on the total pelagic landings.

Distant-Water Purse Seine Fishery

The U.S. purse seine fleet operating in the central and western Pacific uses large purse-seine nets near the ocean surface to capture skipjack, yellowfin, and bigeye tuna in free-swimming schools, around fish aggregation devices (FADs) deployed by the fleet, or by setting on logs or other floating objects. These vessels often land their catches at canneries based in American Samoa. These large vessels (200–250 ft length) could not be economically operated for longline fishing, but some former participants in the U.S. purse seine fishery have acquired more suitable vessels and participated in the American Samoa-based longline fishery.

Distant-Water Jig Albacore Fishery

Domestic albacore jig vessels also supply tuna to the canneries in American Samoa. Since 1985, approximately 50–60 U.S. vessels have participated in the high-seas troll fishery for albacore. This fishery occurs seasonally (December through April) in international waters at 35°–40° S latitude. The vessels range in length from 50 to 120 feet, with the average length about 75 feet. They operate with crews of three to five and are capable of freezing 45–90 tons of fish.

4.15.6.1.2 CNMI-based Pelagic Fisheries

CNMI's pelagic fisheries occur primarily from the island of Farallon de Medinilla (FDM) south to the island of Rota; trolling is the primary fishing method. The pelagic fishing fleet consists primarily of vessels less than 24 feet in length, which usually have a limited 20-mile travel radius from Saipan. Annual landings ranged from 147,000-372,000 pounds between 1983-2009.

The primary target and most marketable species for the pelagic fleet is skipjack tuna (70 percent of 2009 commercial landings). Yellowfin tuna and mahimahi are also easily marketable species, but are seasonal. During their runs, these fish are usually found close to shore and provide easy targets for the local fishermen. In addition to the economic advantages of being near shore and their relative ease of capture, these species are widely accepted by all ethnic groups, which has kept market demand fairly high. It is estimated that in 2009, 44 fishery participants made 183,981 pounds of commercial landings of pelagic species. Table 13 provides summary of CNMI pelagic landings by species.

Table 13. CNMI 2009 commercial pelagic landings

Species	**Landing (Pounds)**
Skipjack Tuna	129,176
Yellowfin Tuna	25,113
Saba (kawakawa)	1,521
Tuna PMUS	**155,809**
Mahimahi	19,580
Wahoo	3,389
Blue Marlin	47
Sailfish	162
Sickle Pomfret	511
Non-tuna PMUS	**23,689**
Dogtooth Tuna	2,575
Rainbow Runner	1,759
Barracuda	24
Troll Fish (misc.)	125
Non-PMUS Pelagics	**4,483**
Total Pelagics	**183,981**

4.15.6.1.3 Guam-based Pelagic Fisheries

There are currently no large-scale pelagic fisheries based in Guam, although foreign longliners transship to Japan through the Port of Guam. Guam's pelagic fisheries consist of primarily small, recreational, trolling boats that are either towed to boat launch sites or berthed in marinas. They fish only within local waters, either within EEZ waters around Guam or on some occasions in the adjacent EEZ waters around CNMI. In 2006, the first Guam-based longline vessel became active.

The estimated annual pelagic landings have varied widely, ranging between 322,000 and 937,000 pounds in the 28-year time series, with about 720,000 pounds landed in 2009 (Table 14). Landings consisted primarily of five major species: mahimahi (*Coryphaena hippurus*),

wahoo (*Acanthocybium solandri*), bonita or skipjack tuna (*Katsuwonus pelamis*), yellowfin tuna (*Thunnus albacares*), and Pacific blue marlin (*Makaira mazara*). Other minor species caught include rainbow runner (*Elagatis bipinnulatus*), kawakawa (*Euthynnus affinis*), dogtooth tuna (*Gymnosarda unicolor*), double-lined mackerel *(Grammatorcynus bilineatus*), and oilfish (*Ruvettus pretiosus*). Sailfish and sharks were also caught during 2009. However, these species were not encountered during offshore creel surveys and were not available for expansion in the 2009 Pelagic FEP fisheries annual report. While sailfish is kept, sharks are often discarded as bycatch. In addition to the pelagic species listed above, approximately half a dozen other species were caught and landed incidentally in 2009.

Table 14. Guam 2009 commercial pelagic landings

Species	Total Landing (lbs)	Non-Charter (lbs)	Charter (lbs)
Skipjack Tuna	331,063	322,682	8,381
Yellowfin Tuna	50,279	49,065	1,214
Kawakawa	3,143	2,567	576
Albacore	0	0	0
Bigeye Tuna	0	0	0
Other Tuna PMUS	29	0	29
Tuna PMUS	**384,514**	**374,314**	**10,200**
Mahimahi	146,649	124,061	22,588
Wahoo	130,733	121,698	9,035
Blue Marlin	32,605	20,411	12,194
Black Marlin	0	0	0
Striped Marlin	0	0	0
Sailfish	904	904	0
Shortbill Spearfish	0	0	0
Swordfish	0	0	0
Oceanic Sharks	0	0	0
Pomfrets	430	430	0
Oilfish	61	61	0
Moonfish	0	0	0
Misc. Longline Fish	0	0	0
Non-tuna PMUS	**311,382**	**267,565**	**43,817**
Dogtooth Tuna	3,265	3,265	0
Rainbow Runner	1,804	1,772	32
Barracudas	4,899	4,899	0
Oceanic Sharks	0	0	0
Misc. Troll Fish	14,027	14,027	0
Non-PMUS Pelagics	**23,995**	**23,963**	**32**
Total Pelagics	**719,891**	**665,842**	**54,049**

4.15.6.1.4 Hawaii-based Pelagic Fisheries

Hawaii's pelagic fisheries are small in comparison to other Pacific Ocean pelagic fisheries such as distant-water purse seine fisheries and other foreign pelagic longline fisheries, but they

comprise the largest fishery sector in the State of Hawaii. Tuna, billfish and other tropical pelagic species supply most of the fresh pelagic fish consumed in Hawaii and support popular recreational fisheries. Hawaii-based longline vessels are capable of traveling long distances to high-seas fishing grounds, while the smaller handline, troll, charter and pole-and-line fisheries—which may be commercial, recreational or subsistence —generally occur within 25 miles of land, with trips lasting only one day.

Hawaii's pelagic fisheries—which include the longline, Main Hawaiian Islands troll and handline, offshore handline, and the aku boat (pole and line) fisheries—are the State's largest and most valuable fishery sector (Table 15; unpublished data prepared for 2009 pelagics annual report). The majority of the commercial landings and revenue come from the longline fishery, although the majority of State Commercial Marine License (CML) holders (who are required to report all catch) are fishermen on small vessels using trolling gear.

Table 15. Hawaii commercial pelagic landings, revenue, and average price by fishery

	2008			2009		
Fishery	**Pounds Landed (1000 lbs)**	**Ex-vessel Revenue ($1000)**	**Average Price ($/lb)**	**Pounds Landed (1000 lbs)**	**Ex-vessel Revenue ($1000)**	**Average Price ($/lb)**
Longline	26,694	$73,769	$2.90	22,145	$57,918	$2.68
MHI trolling	2,971	$5,623	$2.48	2,958	$5,198	$2.39
MHI Handline	697	$1,447	$2.50	1,080	$1,860	$2.05
Offshore Handline	325	$595	$2.37	286	$569	$2.09
Aku boat	703	$889	$1.27	511	$679	$1.33
Other Gear	311	$680	$2.39	168	$316	$2.06
Total	**31,702**	**$83,003**	**$2.81**	**27,148**	**$66,541**	**$2.60**

The target species are tunas and billfishes, but a variety of other species are also important including mahimahi, ono (wahoo), opah (moonfish), and monchong (pomfret) among others. Table 16, prepared for the 2009 pelagics annual report, presents an overview of Hawaii's commercial pelagic landings and their values for 2008 and 2009. Collectively, in 2009, these pelagic catches amounted to landings of approximately 27 million pounds with an estimated ex-vessel value of nearly $66.5 million.

The largest component of pelagic catch in recent years is bigeye tuna. Swordfish was the largest component of the billfish catch in 2008 and 2009, followed by blue marlin. Mahimahi and opah were the largest components of the "other PMUS" category.

Table 16. Hawaii commercial pelagic catch information 2008-2009

	2008			2009		
Species	**Pounds Landed (1000 lbs)**	**Ex-vessel Revenue ($1000)**	**Average Price ($/lb)**	**Pounds Landed (1000 lbs)**	**Ex-vessel Revenue ($1000)**	**Average Price ($/lb)**
Tuna PMUS						
Albacore	874	$1,380	$ 1.72	678	$1,071	$ 1.65
Bigeye Tuna	13,571	$51,006	$ 3.81	10,753	$39,366	$ 3.66
Bluefin Tuna	1	$0	--	2	$0	--
Skipjack Tuna	1,279	$1,221	$ 1.34	1,098	$1,010	$ 1.42
Yellowfin Tuna	3,536	$8,891	$ 2.77	2,844	$6,249	$ 2.52
Tuna PMUS subtotal	**19,260**	**$62,497**	**$3.42**	**15,375**	**$47,696**	**$3.27**
Billfish PMUS						
Swordfish	4,316	$7,363	$ 1.92	3,975	$7,256	$ 1.89
Blue Marlin	1,161	$1,047	$ 1.14	1,154	$1,193	$ 1.16
Striped Marlin	1,023	$1,076	$ 1.05	644	$947	$ 1.47
Other Billfish	566	$386	$ 0.73	296	$295	$ 1.04
Billfish PMUS subtotal	**7,067**	**$9,872**	**$1.57**	**6,070**	**$9,691**	**$1.54**
Other PMUS						
Mahimahi	1,432	$3,268	$ 2.61	1,464	$2,853	$ 2.22
Ono (wahoo)	976	$2,296	$ 2.69	751	$1,673	$ 2.77
Opah (moonfish)	1,335	$2,225	$ 1.72	1,896	$2,376	$ 1.28
Oilfish	491	$942	$ 1.92	544	$704	$ 1.29
Pomfret	677	$1,709	$ 2.55	628	$1,381	$ 2.20
Sharks (whole weight)	416	$154	$ 0.45	373	$139	$ 0.47
Other Pelagics	47	$40	$ 1.11	46	$29	$ 1.15
Other PMUS subtotal	**5,375**	**$10,634**	**$2.15**	**5,703**	**$9,154**	**$1.75**
Total Pelagics	**31,702**	**$83,003**	**$2.81**	**27,148**	**$66,541**	**$2.57**

Recreational fishery

There are no state or federal permit or reporting requirements for recreational participants (those who do not sell a single fish during the year), therefore, catch rates and effort data are unknown. However, in 2001, NMFS in conjunction with HDAR resumed its voluntary Marine Recreational Fishing Statistics Survey (MRFSS) program in Hawaii. Also newly instituted are associated voluntary creel surveys (the Hawaii Marine Recreational Fishing Survey or HMRFS) to determine catch rates and species composition. The results from these two surveys are then combined to yield estimates of recreational catch and effort by both shore and land based fishermen. Limited final species specific estimates of recreational fishing have been informally released, although there is still some question as to whether or not these fishers are purely

recreational (fishing for sport or pleasure with no sales), "subsistence" (fishing primarily for food), or "expense" (selling just enough to cover trip costs).

The total number of recreational fishers in Hawaii is unknown, but there are about 14,300 small vessels in Hawaii; 90% of those are registered as "pleasure craft," of which 6,600 might be used for recreational fishing. The data indicate that little to no bigeye tuna is caught by recreational fishers, while yellowfin landings have been estimated to range between 2,270 and 5,050 tons, with a three year mean of 3,295 tons. Due to criticisms of the sampling methods and statistical algorithms employed to develop recreational catch totals, the Council has recommended that HMRFS catch estimates not be used for management purposes until the issues have been resolved.

Hawaii's charter fisheries primarily troll for billfish. Big game sportfishing rods and reels are used, with four to six lines trolled at any time with outriggers. Both artificial and natural baits are used. In addition to lures, trollers occasionally use freshly caught skipjack tuna and small yellowfin tuna as live bait to attract marlin, the favored landings for charter vessels, as well as yellowfin tuna.

Domestic High Seas Squid Jigging Fishery

This fishery has recently been conducted by a single operation which uses four catcher vessels and one large mothership. These vessels operate under HSFCA permits and visit ports at Honolulu, Hawaii and in Alaska. Each vessel carries 21-38 jigging machines and fishes primarily to the north of the Hawaiian Archipelago targeting neon flying squids (*Ommastrephes bartrami*) during the summer months. See the FEIS written for Amendment 12 to the Pelagic Fishery Plan for a detailed description of these squid and the fishery (NMFS 2005).

4.15.6.1.5 PRIA-based Pelagic Fisheries

There are no known pelagic fisheries based in the PRIA at this time. However, longline fishermen from Hawaii have reported landings from the EEZ waters surrounding the PRIA. For example, the EEZ around Palmyra is often visited by Hawaii-based longline vessels targeting yellowfin tuna, whereas at Johnston Atoll, albacore tuna is often caught in greater numbers than yellowfin or bigyeye tuna. Similarly, the U.S. purse seine fleet also targets pelagic species (primarily skipjack tuna) in the EEZs around some PRIA, specifically, the equatorial areas of Howland, Baker, and Jarvis Islands. The combined amount of fish harvested from these areas from the U.S. purse seine fleet on average is less than 5 percent of their total annual harvest.

The USFWS prohibits fishing within the Howland Island, Jarvis Island, and Baker Island National Wildlife Refuge (NWR) boundaries. The USFWS continues to manage Johnston and Palmyra Atoll as a National Wildlife Refuge, but allows some recreational pelagic fishing within the refuge boundaries.

4.15.6.1.6 Purse Seine Tuna Fishery

The following section is summarized from the 2008 Pelagics Annual Report (WPFMC 2008b). Currently the U.S. purse seine fleet in the Pacific is managed through international agreements with the Pacific Ocean RFMOs and is regulated by NMFS through the High Seas Fishing Compliance Act; however, the Council has developed and NMFS implemented management

measures applicable to the purse seine fishery in the Western Pacific Region. For example, in EEZ waters around American Samoa, vessels over 50 ft in length are prohibited from fishing within 50 nm of shore. The U.S. tropical tuna purse seine fleet has fished the central-western Pacific Ocean under the South Pacific Tuna Treaty since 1988.

In the WCPO, the number of vessels active in the U.S. purse seine fleet has been declining since 2001, decreasing from 32 active vessels to only 15 in 2005. Catches have followed suit with an approximate decline of 40% from 2001 (115,858 mt) to 2005 (74,287 mt) despite a slight increase from 2004 landings (67,419 mt). These purse seine vessels are usually based in American Samoa and offload catches to the cannery in Pago Pago.

In the EPO, the purse seine fishery is being restricted through time/area closures pursuant to the IATTC Resolution C-04-09, whereby the fishery for tunas by purse-seine vessels in the EPO shall be closed from either (1) August 1 to September 11; or (2) November 20 to December 31. This resolution also prohibits "landings, transshipments and commercial transactions in tuna or tuna products ... originating from fishing activities that contravene this resolution."

4.15.6.2 Stocks to be Classified as Ecosystem Components

There are no stocks classified as ecosystem components at this time as all pelagic stocks are subject to either the international or one-year lifespan exception. The Council may choose to classify stocks as EC species at a later date.

4.15.6.3 Stocks Excepted from Annual Catch Limits and Accountability Measures

The Council's recommended classification of the Pelagic Management Unit Species (PMUS) is shown in Table 17. All PMUS are *in the fishery*, but pelagic finfish species will be subject to an international exception per §600.310(h)(2)(ii) and all squid will be excepted under the 1-year lifespan exception per §600.310(h)(2)(iii).

Table 17. Classification of western Pacific PMUS in accordance with NS1 guidelines

Stock/Species	Common Name	Classification (Subject to ACLs, Excepted, or EC)
Thysanoteuthis rhombus	Diamondback squid	Exception: 1-year lifespan
Ommastrephes bartramii	Neon flying squid	Exception: 1-year lifespan
Sthenoteuthis oualaniensis	Purple-back flying squid	Exception: 1-year lifespan
Thunnus alalunga	Albacore tuna	Exception: International
Thunnus obesus	Bigeye tuna	Exception: International
Thunnus albacares	Yellowfin tuna	Exception: International
Katsuwonus pelamis	Skipjack tuna	Exception: International
Makaira nigricans	Blue marlin	Exception: International
Kajikia audax	Striped marlin	Exception: International
Xiphias gladius	Swordfish	Exception: International
Alopius superciliosus	Bigeye thresher shark	Exception: International
Isurus oxyrinchus	Shortfin mako shark	Exception: International
Prionace glauca	Blue shark	Exception: International
Coryphaena spp	Mahimahi	Exception: International

Stock/Species	Common Name	Classification (Subject to ACLs, Excepted, or EC)
Acanthocybium solandri	Wahoo	Exception: International
Lampris spp	Moonfish	Exception: International
Ruvettus pretiosus	Oilfish	Exception: International
Lepidocybium flavobrunneum	Escolar	Exception: International
Taractichthys steindachneri, Eumegistus illustris	Pomfrets	Exception: International
Thunnus orientalis	Pacific bluefin tuna	Exception: International
Euthynnus affinis	Kawakawa	Exception: International
Auxis spp, *Scomber* spp, *Allothunnus* spp	Other tuna relatives	Exception: International
Istiompax indica	Black Marlin	Exception: International
Tetrapturus angustirostris	Shortbill spearfish	Exception: International
Istiophorus platypterus	Sailfish	Exception: International
Alopias pelagicus	Pelagic thresher shark	Exception: International
Alopias vulpinus	Common thresher shark	Exception: International
Carcharhinus falciformis	Silky shark	Exception: International
Carcharhinus longimanus	Oceanic white-tip	Exception: International
Isurus paucus	Longfin mako shark	Exception: International
Lamna ditropis	Salmon shark	Exception: International
Other Gempylidae		Exception: International
Other Bramidae		Exception: International

Stock assessments have not been conducted for all PMUS. Table 1 lists the status of stock assessments completed or planned for all western Pacific PMUS. The following paragraphs provide background information about the various stocks.

These species range across the entire Pacific Ocean, and some have cosmopolitan distributions in the Indian, Atlantic and Pacific Oceans. Although population structure is unknown for all species, it is likely that where population structure exists, all species have broad population ranges like the tunas and billfish. For example, genetic studies on wahoo (Theisen et al. 2008) indicate that this species shows little population structure globally; it is the first example of a vertebrate with a single globally-distributed population. As such, setting a local catch limit for this species in the Western Pacific Region is unlikely to have any conservation benefit for the stock as a whole.

Stock assessments have been conducted for WCPO and EPO skipjack tuna, WCPO and EPO yellowfin tuna, WCPO and EPO bigeye tuna and North Pacific and South Pacific albacore. Additionally, stock assessments have been conducted on North Pacific and Southwest Pacific swordfish, North Pacific and Southwest Pacific striped marlin, North Pacific blue sharks. Stock assessments are planned for other Pacific pelagic sharks by the science provider to the WCPFC, the Secretariat of the Pacific Commission's Oceanic Fisheries Program (Manning et al. 2009). Manning et al. (2009) concluded that sufficient basic biological and fishery data exist to provide preliminary stock status advice of the key shark species (blue, oceanic whitetip, short- and

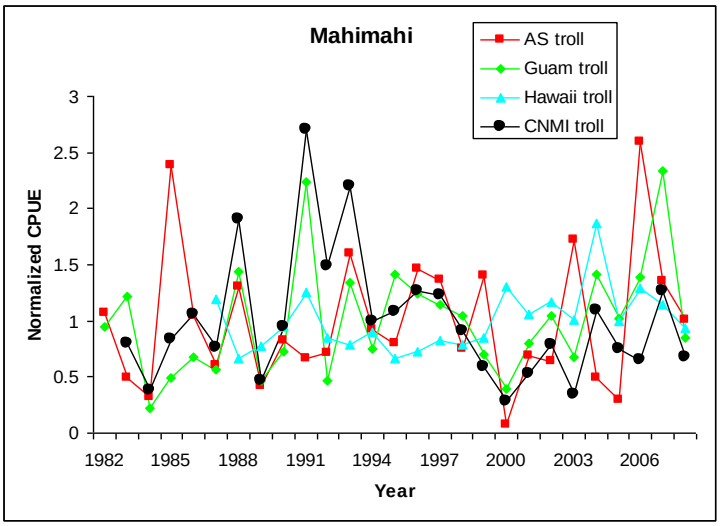
longfin mako, silky, bigeye, common, and pelagic thresher sharks). The salmon shark is only caught when the shallow-set longline fishery is operating at the extreme northerly edge of its range.

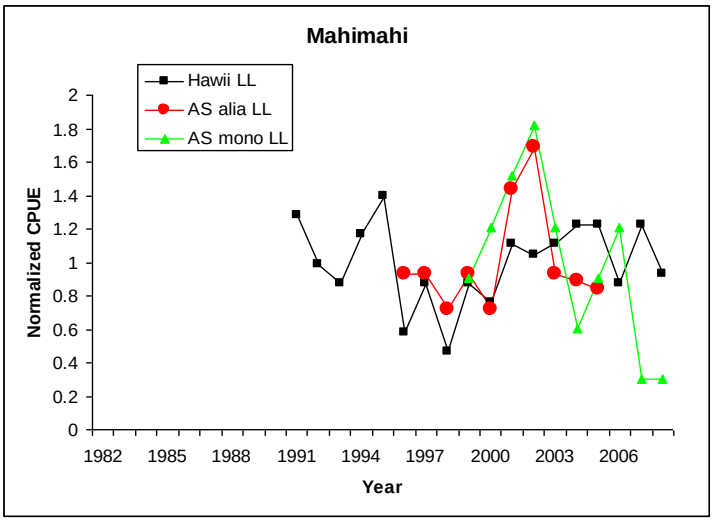
The WCPFC has implemented conservation and management measures on WCPO bigeye, yellowfin, South Pacific and North Pacific albacore, Southwest Pacific swordfish and striped marlin, western & central Pacific sharks, and Pacific bluefin tuna. New stock assessments are planned for blue and striped marlin, North Pacific swordfish, and opah. Although planned stock assessments will not cover all the species listed in Table 17, it is clear that there is intent by the tuna RFMOs to assess all economically important species and, where necessary, implement management measures. In this context, it is worth noting that the WCPFC conservation and management measures for sharks were implemented without stock assessments.

Mahimahi is targeted and landed in large quantities in CNMI and Guam; unfortunately there has been no stock assessment performed to date. Mahimahi is a popular sportfish in American Samoa, but there are no landings data. It is considered "in the fishery." Bigeye thresher and shortfin mako sharks are actively targeted by the U.S. drift gillnet fishery off the West Coast.

In the absence of stock assessments, the only source of information on stock status for pomfrets, moonfish, wahoo, mahimahi, and blue and striped marlins is from catch per unit effort (CPUE) trends. The CPUE trends of mahimahi, wahoo, blue marlin, striped marlin, moonfish, and pomfrets in the Western Pacific Region pelagic fisheries are shown in Figures 19 through 24. Mahimahi, wahoo, moonfish, and pomfret CPUEs are highly variable but do not demonstrate any consistent trends. The troll CPUEs for mahimahi show remarkable consistency between CNMI and Guam, and all four troll CPUE trends show an increasing trend since 2000.

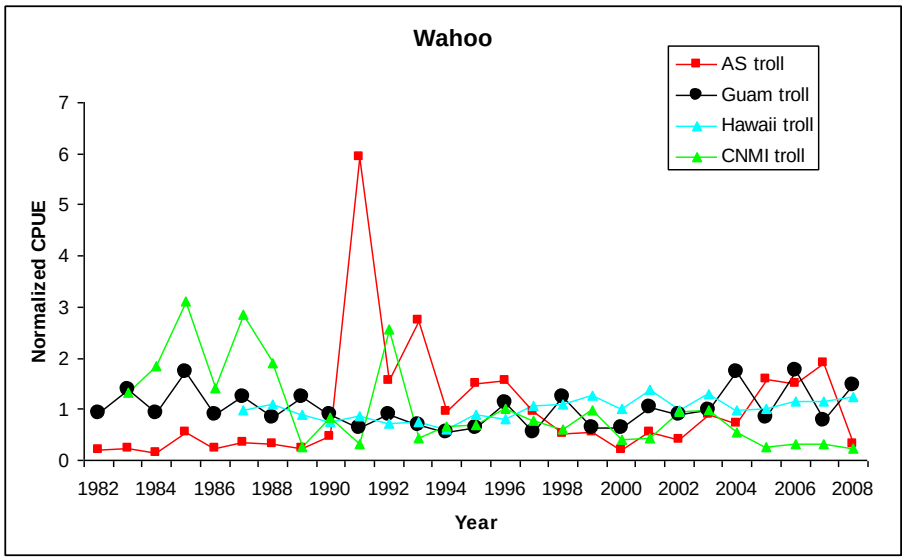
Figure 19. CPUE time series for mahimahi in Western Pacific Region troll and longline fisheries.

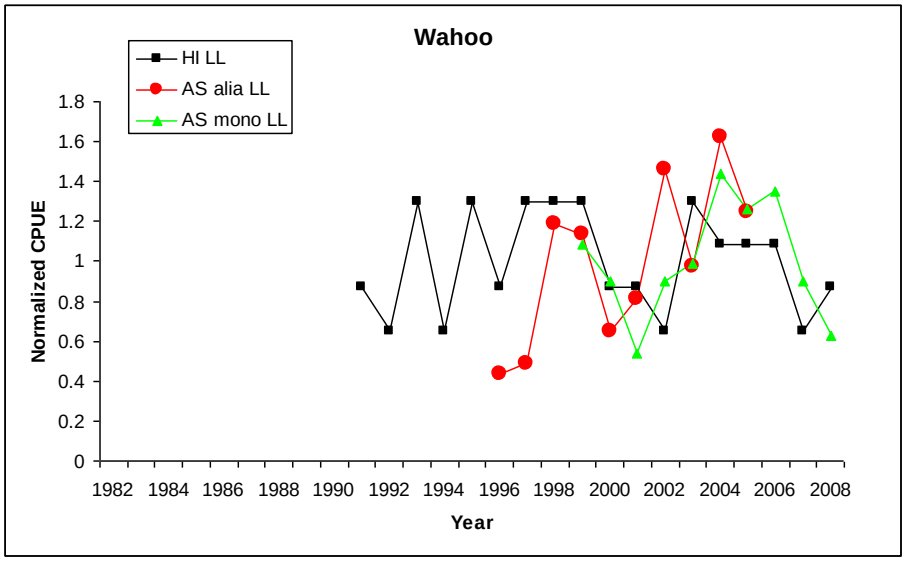




Wahoo troll and longline CPUEs (Figure 20) do not show any consistent trends and, like mahimahi, are highly variable from year to year.

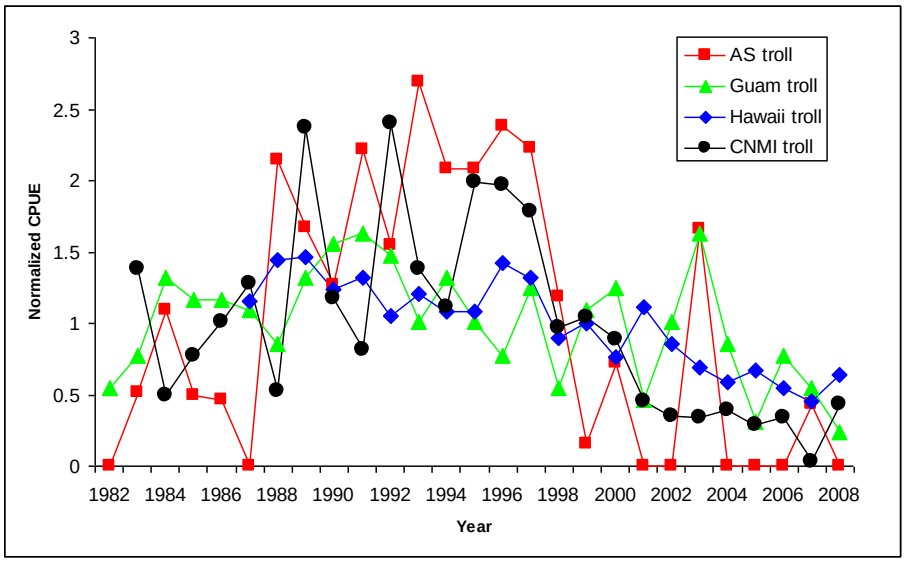
Figure 20. CPUE time series for wahoo in western Pacific region troll (top) and longline fisheries (bottom).

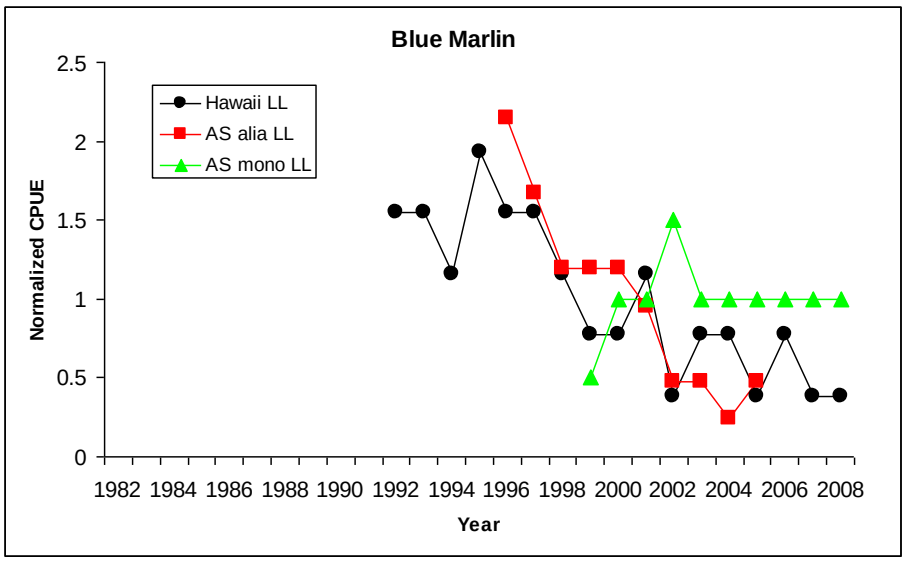




Blue marlin troll CPUE trends (Figure 21) are also highly variable but there is appears to be a consistent increasing trend during the 1980s to mid-1990s, with a general declining trend thereafter. The blue marlin Hawaii longline and American Samoa alia longline CPUE trends show a declining trend consistent with the latter half of the troll CPUEs, while the American Samoa monohull CPUEs are mostly flat.

Figure 21. CPUE time series for blue marlin in western Pacific region troll (top) and longline fisheries (bottom).





The Hawaii striped marlin longline and troll CPUEs (Figure 22) both show declining trends, although the longer troll time series shows relatively stable CPUE until the mid 1990s after which CPUE declines. Hawaii longline moonfish CPUE (Figure 23) has two stable phases in the 1990s and the 2000s, but a major decline between the two phases from 1999 to 2000. A similar decline happened in the American Samoa large vessel longline fishery in 2001 and 2002. Pomfret CPUE (Figure 24) has shown a variable and slightly rising trend in the Hawaii longline fishery and has been stable apart from one year in the American Samoa longline fishery.

Figure 22. CPUE time series for striped marlin in Hawaii troll and longline fisheries

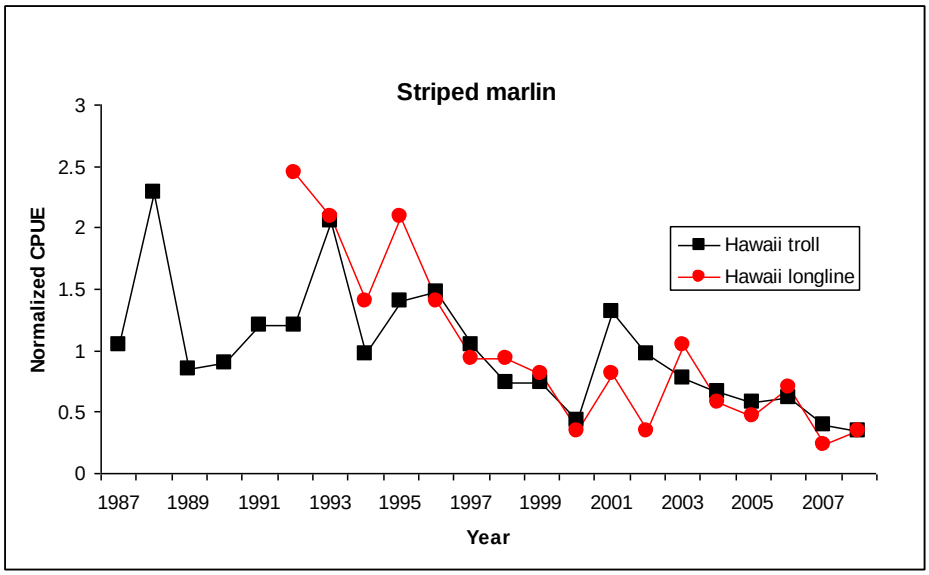


Figure 23. CPUE time series for moonfish in Hawaii and American Samoa and longline fisheries

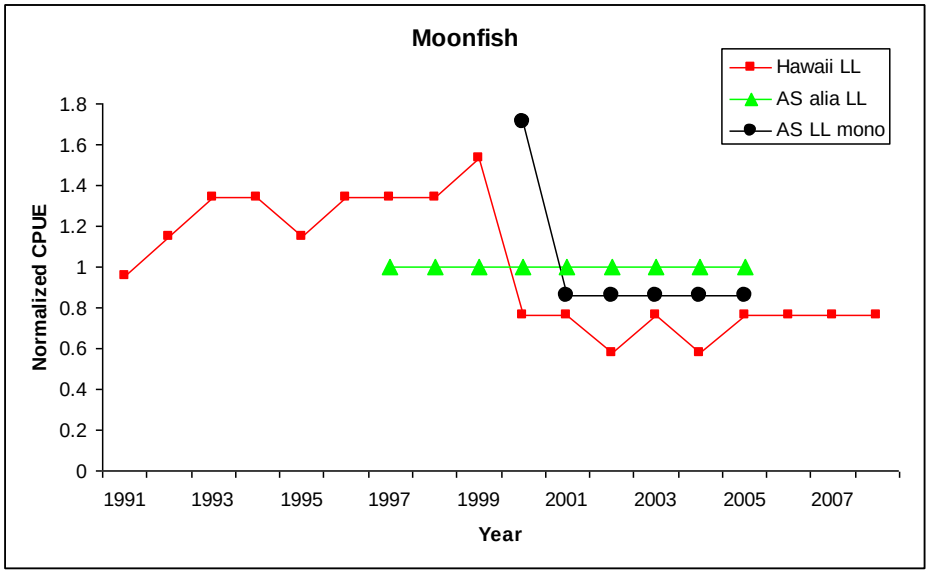
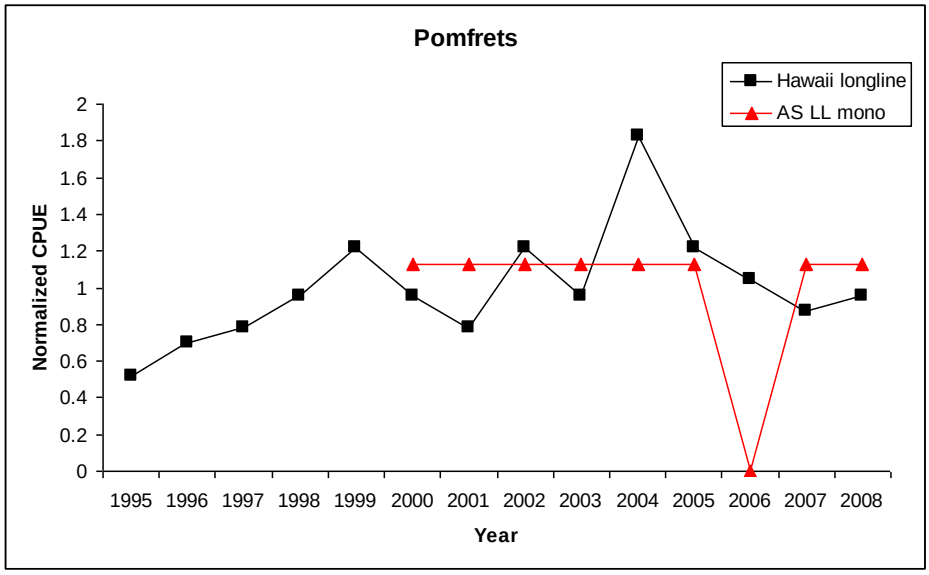


Figure 24. CPUE time series for pomfrets in Hawaii and American Samoa and longline fisheries



4.15.6.3.1 International Exception: Specification of MSY and SDC

The use of the international exception will not adversely reduce management of the Pelagic MUS that are proposed to be assigned to this category. The tuna regional fishery management organizations (RFMO) will likely conduct stock assessments on all species of importance other than tuna, including billfish and incidentally caught but economically important species such as mahimhi, wahoo, opah and monchong. Although stock assessments have yet to be conducted for the majority of these species (Table 18), the tuna RFMOs are collecting and improving the provision of catch information on all economically important pelagic species, and requiring member countries provide this information in their annual reports to the RFMOs. The NMFS guidelines require that even species subject to the international exception should have MSY, OFL, and SDC regardless of the fact that an ACL is not implemented. However, without a stock assessment for these stocks, it is not possible at this time to determine these values; these values will only be forthcoming as stock assessments are completed. The results will be included in the international fisheries module of the Council's Pelagic Fisheries Annual Report.

Table 18. Specification of MSY for Pelagic MUS

Pelagic MUS	MSY (by stock structure)	Source
Albacore tuna (*Thunnus alalunga*)	S. Pacific Ocean - Point estimate: 60,000 mt - Range: 58,683-121,855 mt	Hoyle and Davies (2009)
	N. Pacific Ocean = NA	ISC (2006)
Bigeye tuna (*Thunnus obesus*)	WCPO - Point estimate: 73,840 mt - Range: 67,800-95,680 mt	Harley et al. (2010)
	EPO - Point estimate: 83,615 mt - Range: 65,209-176,218 mt	Aires-da-Silva and Maunders (2010)

Pelagic MUS	MSY (by stock structure)	Source
Yellowfin tuna (*Thunnus albacares*)	WCPO - Point estimate: None - Range: 522,000-636,800 mt	Langley et al. (2009)
	EPO - Point estimate: 273,159 mt - Range: 267,222-327,475 mt	Maunders and Aires-da-Silva (2010)
Skipjack tuna (*Katsuwonus pelamis*)	WCPO - Point estimate: 1.38 million mt - Range: 1,200,800-1,767,600 mt	Hoyle et al. 2010
	EPO = NA	Maunders and Hartley (2005); Maunder 2010
Pacific bluefin tuna (*Thunnus orientalis*)	NA	ISC (2008); ISC (2010)
Kawakawa (*Euthynnus affinis*)	NA	No assessment conducted.
Other tuna relatives (*Auxis* spp., *Scomber* spp., *Allothunnus* spp.)	NA	No assessment conducted.
Black marlin (*Istiompax indica*)	NA	No assessment conducted.
Blue marlin (*Makaira nigricans*)	Pacific Ocean - Point estimate: 13,056 mt - Range: None	Kleiber et al. 2003
Striped marlin (*Kajikia audax*)	Southwestern Pacific Ocean - Point estimate: 2,610 mt - Range: 2,555-3,003 mt	Langley et al. (2006)
	EPO - Point estimate: None - Range: 3,700-9,200 mt	Hinton and Maunder (2004)
Swordfish (*Xiphias gladius*)	N. Pacific Ocean Point estimate: None Range: 17,500-19,100 mt	Brodziak and Ishimura (2010)
	Southeastern Pacific Ocean - Point estimate: None - Range: 13,000-14,000 mt	Hinton and Maunder (2007)
Shortbill spearfish (*Tetrapturus angustirostris)*	NA	No assessment conducted.
Sailfish (*Istiophorus platypterus*)	NA	No assessment conducted.
Bigeye thresher shark (*Alopius superciliosus*)	NA	No assessment conducted.
Shortfin mako shark (*Isurus oxyrinchus*)	NA	No assessment conducted.

Pelagic MUS	MSY (by stock structure)	Source
Blue shark (*Prionace glauca*)	N. Pacific Ocean 3.5 million sharks or approximately 60,000 mt	Kleiber et al. 2009; Kleiber pers. comm. Jan. 3, 2011
Pelagic thresher shark (*Alopias pelagicus*)	NA	No assessment conducted.
Common thresher shark (*Alopias vulpinus*)	NA	No assessment conducted.
Silky shark (*Carcharhinus falciformis*)	NA	No assessment conducted.
Oceanic white-tip (*Carcharhinus longimanus)*	NA	No assessment conducted.
Longfin mako shark (*Isurus paucus*)	NA	No assessment conducted.
Salmon shark (*Lamna ditropis*)	NA	No assessment conducted.
Mahimahi (*Coryphaena* spp.)	NA	No assessment conducted.
Wahoo (*Acanthocybium solandri*)	NA	No assessment conducted.
Moonfish (*Lampris* spp.)	NA	No assessment conducted.
Oilfish (*Ruvettus pretiosus*) Escolar (*Lepidocybium flavobrunneum*)	NA	No assessment conducted.
Pomfrets (*Taractichthys steindachneri, Eumegistus illustris*)	NA	No assessment conducted.
Other Gempylidae	NA	No assessment conducted.
Other Bramidae	NA	No assessment conducted.

NA= No MSY estimate available.

4.15.6.3.2 One-Year Lifespan Exception: Specification of MSY, SDC, OY, ABC, ABC Control Rule

There are no MSYs or other biological reference points established for the squid species, however the three pelagic squids (diamondback squid (*Thysanoteuthis rhombus*), neon flying squid (*Ommastrephes bartrami*), and the purpleback flying squid (*Sthenoteuthis oualaniensis*)) have a one-year life span and thus are excepted from ACLs. All are managed under the Pacific Pelagic FEP; their life history information is described in Amendment 15 to the Pelagic FMP after work by Yatsu et al. (1997); Nigmatullin et al. (1995); and Nesis (1993). None of these pelagic squid species have been determined by the Secretary to be subject to overfishing or overfished.

4.15.6.4 Stocks Subject to Annual Catch Limits and Accountability Measures

There are no species subject to ACLs and AMs under the Pelagics FEP. All finfish subject to international management; the remaining species of pelagic squid receive the 1-year lifespan exception.

4.15.6.4.1 ABC Control Rule

There are no species subject to ACLs and AMs under the Pelagics FEP. However, should the Council choose to specify ACLs for any pelagic fisheries, the mechanisms for calculating an ABC are identified in Section 3.1.1 of this amendment to do so.

4.15.6.4.2 Mechanisms for Specifying Annual Catch Limits

There are no species subject to ACLs and AMs under the Pelagics FEP, However, should the Council choose to specify ACLs for any pelagic fisheries, the mechanism is identified in Section 3.1.2 of this amendment to do so.

4.15.6.4.3 Accountability Measures

There are no species subject to ACLs and AMs under the Pelagics FEP. However, should the Council choose to specify ACLs for any pelagic fisheries, a suite of accountability measures that could be chosen to prevent the ACL from being exceeded are identified in Section 3.1.3 of this amendment to do so.

5.0 Consistency with Applicable Laws

5.1 Magnuson-Stevens Fishery Conservation and Management Act

Section 303(a) of the Magnuson-Stevens Act requires that any fishery management plan which is prepared by any Council or by the Secretary with respect to any fishery, include the following 15 elements listed below.

1. Description of Conservation and Management Measures
   This amendment will add a new conservation and management measure, which is a mechanism for establishing annual catch limits. Other conservation and management measures can be found in the FEPs.

2. Description of the Fishery
   Descriptions of the fisheries for the Western Pacific region can be found in Section 4.15.

3. Specification of MSY/OY
   The proposed action would not establish any new specification of MSY or OY for any western Pacific fishery. A description of MSY and OY can be found for federally managed stocks in the 5 FEPs. Council has clarified that the SDC it will utilize is maximum fishing mortality threshold, MFMT, to determine the overfishing status for all stocks and MSST for the overfished determination.

4. Specification of the Capacity to Harvest OY
   The proposed action would not establish any new specification of the extent to which fishing vessels will harvest OY for any western Pacific fisheries. A description of the capacity for U.S. vessels to harvest OY can be found in Chapter 4 of each western Pacific FEP.

5. Specification of Fishery Performance Information (Annual/SAFE Report Content)
   The proposed action would not change fishery performance because it is an administrative measure. In the future, ACLs and AMs may result in changes to fishery performance that would be evaluated at the time specific ACLs and AMs are proposed. The performance of the fisheries are contained in annual reports and in Section 4.15 of this amendment.

6. Temporary Adjustments to Fishery Access Due to Inclement Weather Conditions
   The proposed action would not establish any new temporary adjustments regarding access to fisheries as a result of weather or ocean conditions. Weather-related adjustments in fishery access are not currently established for any western Pacific fishery management program.

7. Designation of Essential Fish Habitat
   The proposed action would not establish any new EFH designations for any western Pacific fishery.

8. Specification of Scientific Data Necessary for Effective Implementation of the FMP
   Sections 3.0 and 4.0 of this amendment contain scientific information necessary for implementation of the annual catch limits and accountability measures required by the MSRA.

9. Fishery Impact Statement
   Section 4.7 includes an analysis on the impacts of the action on fishers and fishing communities. Because this amendment implements a mechanism to establish ACLs, but not the ACLs themselves, at this point there is no impact to the fishery participants or communities. In the future, ACLs and AMs are expected to promote long-term sustainability of fishery resources and this is likely to be beneficial to fishery participants and communities.

10. Specification of Status Determination Criteria (SDC)
    The proposed action would not establish any new criteria for identifying when a fishery is overfished or approaching an overfished condition. Status determination criteria, including MSY control rules and rebuilding plans can be found in the five FEPs. The Council elected to utilize maximum fishing mortality threshold (MFMT) as its SDC for the overfishing status and continues to utilize minimum stock size threshold (MSST) for overfished determination (see Section 4.15.1).

11. Bycatch Reporting
    The proposed action would not require any new provision to assess bycatch in any Western Pacific fisheries.

12. Conservation Measures for Catch and Release Fishery Management Program
    There are no catch and release fishery management programs authorized under any western Pacific FEP, nor are any proposed through this amendment.

13. Description of the Fishery Sectors
    A description of commercial, recreational, and charter fishing sectors of the fisheries can be found in the FEPs with pertinent updates provided in Section 4.15.

14. Fair and Equitable Harvest Allocation
    The proposed action would not reduce or allocate the overall harvest in any western Pacific fishery. Allocation of harvest among commercial, recreation or charter sectors is not currently utilized in any western Pacific fishery management program and approval of the proposed mechanism to be used to develop harvest limits and related management measures (ACLs and AMs) would not require or preclude the use of harvest allocations in the future.

15. ACLs and AMs
    The proposed action would establish a new mechanism by which the Council would establish annual catch limits and measures to ensure accountability for all fisheries in the western Pacific region subject to the requirement. It also specifies stocks that would be subject to statutory exceptions and authorizes the use of classifying some MUS as ecosystem component stocks. Specification of the ACLs and AMs will occur in subsequent management actions, as will utilization of the ecosystem component classification.

5.1.1 National Standards

Section 301 of the Magnuson-Stevens Act requires that regulations implementing any FMP or amendment be consistent with the ten national standards listed below.

National Standard 1 states that 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.

The proposed action is consistent with National Standard 1 because it establishes a mechanism to set ABCs, ACLs, and AMs, which are management control measures that are intended to prevent overfishing while allowing for a sustainable harvest that is consistent with optimum yield. In setting ACLs, scientific and management uncertainty, and social, economic, and ecological factors are considered. In addition, the amendment establishes a suite of accountability measures to prevent an ACL from being exceeded and to correct overages of the ACLs should they occur, thus minimizing the potential for overfishing to occur.

National Standard 2 states that conservation and management measures shall be based upon the best scientific information available.

The proposed action is consistent with National Standard 2 because the mechanism was not only developed by fishery scientists and managers in consideration of available fishery data, but was also based on an evaluation of the best scientific information available for each fisheries.

National Standard 3 states that, 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.

The proposed action is consistent with National Standard 3 because the ACL mechanism can be used to manage an individual stock of fish as a unit throughout its range, as well as any interrelated stocks of fish.

National Standard 4 states that 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 proposed action is consistent with National Standard 4 because it does not allocate fishing privileges among different states, and therefore does not discriminate between residents of different states. The proposed mechanism is based on scientific and management information and is an administrative process at this time. There is nothing inherent in the mechanism that would result in allocations. When specific ACLs and AMs are available in the future, any allocation or assignment of fishing privileges will be reviewed again for consistency with National Standard 4.

National Standard 5 states that 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.

The proposed action is consistent with National Standard 5 because ACLs and AMs do not allocate resources solely on an economic basis. Rather, ACLs and AMs are intended to ensure that resources are sustainably harvested, and available for future generations.

National Standard 6 states that conservation and management action shall take into account and allow for variations among, and contingencies in, fisheries, fishery resources and catches.

The proposed action is consistent with National Standard 6 because ACLs will be developed for the various fisheries individually based on each fishery's characteristics within the Western Pacific region. Under the proposed action, catch limits will be specified on an annual basis and will allow managers to account for variations and natural fluctuations of fishery resources as well as the probability of overfishing through application of the acceptable biological catch control rule. As a contingency, the proposed action includes accountability measures to ensure the annual catch limits are not exceeded, and to correct or mitigate overages if they occur.

National Standard 7 states that conservation and management measures shall, where practicable, minimize costs and avoid unnecessary duplication.

The proposed action is consistent with National Standard 7 because it does not duplicate any management measures in place, nor does it require investment by the fisheries because this amendment solely implements a mechanism for determining ACLs and AMs. In the future, it is not anticipated that ACLs will result in large costs for compliance because an ACL does not impose any costs to fishery participants to comply. Also, in cases where a harvest limit already exists, the ACL mechanism will replace the previous methods used to establish such limits and this will avoid duplication.

National Standard 8 states that 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 proposed action is consistent with National Standard 8 because the importance to the fishing communities, both socially and economically, as described in Section 3.1, is incorporated into the determination of ACLs via a qualitative methodology that guides the reduction of ACL from ABC (or ACT from ACL) by taking social and economic factors into account.

National Standard 9 states that 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.

The proposed action is consistent with National Standard 9 because it maintains the conservation and management measures of the FEPs with respect to bycatch minimization.

National Standard 10 states that conservation and management measures shall, to the extent practicable, promote the safety of human life at sea.

The proposed action is not expected to decrease safety of human life at sea because it solely is a mechanism by which ACLs and AMs will be developed.

5.2 National Environmental Policy Act

NOAA Administrative Order (NAO) 216-6, Environmental Review Procedures, requires all proposed agency actions be reviewed with respect to environmental consequences on the human environment in accordance with the National Environmental Policy Act (NEPA). This proposed omnibus amendment to the Council's five FEPs has been written and organized to meet both the requirements of the Magnuson-Stevens Fisheries Conservation and Management Act and NEPA.

The environmental assessment (EA) contained in this Omnibus FEP amendment uses biological information from, and incorporates by reference, the affected environment described in the Council's Fishery Ecosystem Plans (FEPs) for the Hawaii Archipelago (WPFMC 2009a), the American Samoa Archipelago (WPFMC 2009b), the Mariana Archipelago (WPFMC 2009c), the Pacific Remote Island Areas (WPFMC 2009d), the Pacific Pelagic Fisheries of the Western Pacific Region (WPFMC 2009e); as well as in the Final Programmatic Environmental Impact Statement (PEIS): Toward an Ecosystem Approach for the Western Pacific Region (WPFMC 2009f).

Scope of the proposed action and fisheries affected

The affected environment section of the 2009 Final PEIS): Toward an Ecosystem Approach for the Western Pacific Region (WPFMC 2009f) describes the fisheries and area of impact in detail and this information is summarized in this document in sections 1.4 and 4.0. The proposed ACL mechanism will be applied to all fisheries of the western Pacific, although only certain fisheries will be required to operate under the ACL regime in 2011. Once certain stocks are approved to qualify for statutory exceptions and some designated as ecosystem component species (see proposed action in Section 2.1), the ACLs and AMs will primarily affect domestic non-pelagic fisheries of American Samoa, Hawaii, Guam, and CNMI occurring in the U.S. EEZs of these archipelagic areas. There is no non-pelagic fishing in the PRIAs, but there is ongoing development of appropriate non-commercial fishing opportunities with the PRIA marine national monuments. Additionally, all pelagic MUS are likely to qualify for statutory exception from the ACL/AM requirement under the international management exception or the short life cycle exception. The FEPs for the PRIA and Pacific Pelagic areas will be amended to include the mechanism; ACLs would be specified if the Council determined a need to implement catch limits for those areas.

Alternatives considered

The proposed mechanism for developing ACLs and AMs was developed to accord with guidelines of National Standard 1, taking into account the specific fishery conditions of the western Pacific region the Council manages. Over the course of time, after intensive work by the Council and with input from fishery scientists, managers, policy analysts, and in coordination with the general public, the proposed mechanism took several forms before the present version was approved by the Council in October of 2010. Two alternatives are considered in the EA; the proposed action and no action.

Summary of environmental impacts

Section 4.0 includes a description of the potential impacts of the proposed mechanism on topics of management concern as compared with the no-action baseline, and includes a general discussion of the potential environmental impacts of operating western Pacific fisheries under the required ACL/AM management regime To summarize here, approval of the proposed mechanism to be used to develop and specify ACLs and AMs is an administrative action that would not have an environmental impact. Once developed using the approved mechanism, ACLs and AMs are expected to promote sustainability in fishery resources by having greater management review of fishing and ensuring accountability in terms of ensuring fishing is within these biologically based limits. In the future, however, environmental impacts will need to be evaluated on a site- and fishery-specific basis once specific ACLs and AMs are available.

A conceptual environmental impact analysis was undertaken to consider the impacts of managing fisheries under ACLs. This conceptual impact study found that it is unlikely that fisheries would change in response to the ACLs and AMs, unless the ACLs were to constrain fishing to lower levels than is currently occurring. Without having specific ACL and AMs, the impacts on the environment cannot be determined at this time and the Council and NMFS will conduct environment impact reviews once the specific harvest limits are available.

Social and economic impacts were also considered conceptually. The proposed mechanism would not change fishing communities or the economics of fishing in any areas of the western Pacific region. In general, management of fisheries under ACLs and AMs is expected to provide for long-term sustainability of fish stocks and stock complexes, which would have a positive long term benefit on fishery participants, local economies, and local communities. Harvest controls in the form of ACLs and AMs are just one of many tools that can be used in fishery management to ensure that resources are sustainably managed and continue to allow fisheries participants to have social and economic benefits.

The EA is available for public review and is being distributed in association with rulemaking for the proposed FEP amendment. The analysis in the EA will be used by the Regional Administrator to make a determination on whether the proposed mechanism for developing ACLs and AMs and associated decisions regarding the use of statutory exceptions and designations of qualifying stocks and stock complexes as ecosystem component species would have a significant environmental effect that would require the preparation of an environmental impact statement. The EA will allow interested and affected parties to participate in the decision-making process.

Preparers
The environmental impact analysis for the proposed FEP amendment was prepared by NMFS staff in coordination with the Council staff:

NOAA Pacific Islands Regional Office, Sustainable Fisheries Division staff:
Ethan Brown, Resource Management Specialist, NEPA
Phyllis Ha, NEPA Specialist
Marilyn Luipold, NEPA Coordinator
Jarad Makaiau, Fishery Policy Analyst

Western Pacific Fishery Management Council staff:
Paul Dalzell, Senior Scientist
Sarah Pautzke, Fishery Analyst

Coordination with other agencies
The proposed action described in this amendment document was developed in coordination of with various federal and local government agencies that are represented on the Western Pacific Fishery Management Council. Specifically, agencies that have participated in the deliberations and development of the proposed management measures include:

American Samoa Department of Marine and Wildlife Resources
Guam Department of Agriculture, Division of Aquatic and Wildlife Resources
Hawaii Department of Land and Natural Resources, Division of Aquatic Resources
Northern Mariana Island Department of Land and Natural Resources, Division of Fish and Wildlife
U.S. Coast Guard
The U.S. Fish and Wildlife Service
U.S. Department of State

Public coordination
NMFS is soliciting public comment on the omnibus FEP amendment including an EA, and the proposed rule. Instructions on how to comment on the document and the proposed rule can be found by searching on RIN 0648-AY93 at www.regulations.gov, or by contacting the responsible official or Council listed in this document.

5.3 Coastal Zone Management Act
The Coastal Zone Management Act (CZMA) requires a determination that a recommended management measure has no effect on the land, water uses, or natural resources of the coastal zone or is consistent to the maximum extent practicable with an affected state's enforceable coastal zone management program. A copy of this document has been submitted to the appropriate state government agencies in American Samoa, Guam, Hawaii and the Northern Mariana Islands for review and concurrence with the preliminary determination that the preferred alternatives are consistent, to the maximum extent practicable, with their respective coastal zone management programs. The proposed mechanism is administrative and will not result in changes to any fishery. When specifications are available in the future, the effects of the ACL/AM

specifications on the coastal zone of these areas will be evaluated and the specifications subject to additional coordination in accordance with the CZMA.

5.4 Endangered Species Act

The Endangered Species Act (ESA) provides for the protection and conservation of threatened and endangered species. Section 7(a)(2) of the ESA requires federal agencies to ensure that any action authorized, funded, or carried out by such agencies is not likely to jeopardize the continued existence of any endangered or threatened species or result in the destruction or adverse modification of the critical habitat of such species.

Pursuant to Section 7 of the ESA, NMFS has evaluated each fishery authorized and managed under the five western Pacific Fishery Ecosystem Plans and has determined that this action is not likely to jeopardize the continued existence of any listed species or adversely affect any of their critical habitats.

The proposed action does not specify annual catch limits or accountability measures for any western Pacific fishery, and would not modify vessel operations or other aspects of any fishery. Therefore, the proposed action is not likely to jeopardize the continued existence of any listed species or adversely affect any of their critical habitats. When annual catch limit specifications, accountability measures are proposed in the future, those actions would be subject to review for compliance with ESA and other applicable laws.

5.5 Marine Mammal Protection Act

The Marine Mammal Protection Act (MMPA) prohibits, with certain exceptions, the take of marine mammals in the U.S. and by U.S. citizens on the high seas, and the importation of marine mammals and marine mammal products into the United States. Under section 118 of the MMPA, NMFS must publish, at least annually, a List of Fisheries that classifies U.S. commercial fisheries into one of three categories. These categories are based on the level of serious injury and mortality of marine mammals that occurs incidental to each fishery. Specifically, the MMPA mandates that each fishery be classified according to whether it has a frequent, occasional, or remote likelihood of-, or no-known, incidental mortality or serious injury of marine mammals. The 2011 List of Fisheries (LOF) published by NMFS on November 8, 2010 (75 FR 68468). The proposed action does not specify annual catch limits or accountability measures for any western Pacific fishery, and would not modify vessel operations or other aspects of any fishery. Therefore, the proposed action is not expected to affect any marine mammal population or habitats in a manner that has not been previously assessed and analyzed by NMFS.

5.6 Paperwork Reduction Act

The purpose of the Paperwork Reduction Act is to minimize the paperwork burden on the public resulting from the collection of information by or for the Federal government. It is intended to ensure the information collected under the proposed action is needed and is collected in an efficient manner (44 U.S.C. 3501(1)). The proposed action would not establish any new permitting or reporting requirements and therefore it is not subject to the provisions of the Paperwork Reduction Act.

5.7 Regulatory Flexibility Act

The Regulatory Flexibility Act (RFA) (5 U.S.C. 601 *et seq.*) requires government agencies to assess and present the impact of their regulatory actions on small entities including small businesses, small organizations, and small governmental jurisdictions. The assessment is done by preparing an Initial Regulatory Flexibility Analysis when impacts are expected. The purpose and need for action is described in Section 2.0. Section 3.0 describes the management alternatives considered to meet the purpose and need for action. Section 4.0 provides a description of the fisheries that may be affected by this action and Section 5.0 analyzes environmental impacts of the alternatives considered.

The proposed action is not expected to have any impact on small entities, organizations or government jurisdictions as the action is primarily administrative in nature and would only establish a mechanism for specifying annual catch limits for federal fishery resources. Similarly, authorizing the future use of the ecosystem classification system and identification of species with statutory exceptions to annual catch limits would not have any impacts on small entities, businesses, organizations or government jurisdictions. As a result, an initial regulatory flexibility analysis is not required and none has been prepared; however, when annual catch limit specifications, accountability measures and ecosystem component classifications are proposed in the future, these actions will be reviewed by NMFS to ascertain whether the proposal complies with all applicable laws, including any relevant impacts on small businesses, organizations and small government jurisdictions.

5.8 Administrative Procedures Act

All federal rulemaking is governed under the provisions of the Administrative Procedures Act (APA) (5 U.S.C. Subchapter II) which establishes a "notice and comment" procedure to enable public participation in the rulemaking process. Under the APA, NMFS is required to publish notification of proposed rules in the Federal Register and to solicit, consider and respond to public comment on those rules before they are finalized. The APA also establishes a 30-day wait period from the time a final rule is published until it becomes effective, with rare exceptions. This amendment complies with the provisions of the APA through the Council's extensive use of public meetings, requests for comments, and consideration of comments. The notice of availability and proposed rule associated with this amendment will also include requests for public comments.

5.9 Executive Order 12866

To meet the requirements of Executive Order 12866 (E.O. 12866), NMFS requires that a Regulatory Impact Review (RIR) 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 regulatory actions, 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.

The primary objective of the proposed action is implement a mechanism for specifying annual catch, at a level such that overfishing does not occur. The purpose and need for this action can be found in Section 2.0. Section 3.0 describes the management alternatives considered to meet the

purpose and need for action. Section 4.0 provides a description of the fisheries that may be affected by this action and Section 5.0 analyzes potential impacts of the proposed action on western Pacific fisheries and fishing communities. Due to the administrative nature of the proposed action, there are no economic impacts associated with establishing a mechanism for specifying annual catch limits, authorizing the future use of the ecosystem component (EC) species classification or identifying pelagic species that have statutory exceptions from annual catch limits. While future annual catch limits have the potential to result in economic impacts, it is not possible to predict any concrete impacts until specific catch limits are specified. Therefore, any analysis of potential impacts at this time would be speculative. When actual annual catch limit specifications are proposed in the future, an economic analysis of the expected effects of alternative catch limits, including net socio-economic benefits on affected communities would be provided.

In accordance with E.O. 12866, the following is set forth: (1) This rule is not expected 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 actions 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, the proposed action is not likely to be significant under E.O. 12866.

5.10 Executive Order 12898

E.O. 12898 requires that a federal agency incorporate environmental justice part of its mission by identifying and addressing, as appropriate, disproportionately high and adverse human health or environmental effects of its programs, policies, and activities on minority populations and low-income populations in the United States and its territories and possessions, the District of Columbia, the Commonwealth of Puerto Rico, and the Commonwealth of the Northern Mariana Islands. A memorandum by President Clinton, which accompanied E.O. 12898, made it clear that environmental justice should be considered when conducting NEPA analyses by stating the following: “Each federal agency should analyze the environmental effects, including human health, economic, and social effects of federal actions, including effects on minority populations, low-income populations, and Indian tribes, when such analysis is required by NEPA.”

The proposed action is not expected to disproportionately impact human health or the environment because the action is administrative in nature. While future ACL specifications are not expected to have any negative environmental impacts that result in a disproportionate impact on minority populations and low-income populations of the western Pacific, it is not possible to predict any concrete impacts until specific annual catch limits are determined.. When specific annual catch limits and accountability measures are proposed for any fishery, they will be subject to review for compliance with NEPA and other applicable laws, including E.O. 12898.

5.11 Information Quality Act

The Information Quality Act requires federal agencies to ensure and maximize the quality, objectivity, utility, and integrity of information disseminated by federal agencies. To the extent feasible, the information in this document is current. Much of the information was made available to the public during the deliberative phases of developing the amendment during meetings of the Council over the past several years. The information was also improved based on the guidance and comments from the Council's advisory groups.

The document was prepared by Council and NMFS staff based on information provided by NMFS Pacific Islands Fisheries Science Center (PIFSC) and NMFS Pacific Islands Regional Office (PIRO) and after providing opportunities for members of the public to comment at the Council meetings listed in Section 1.2. Additional comments on the document may be received during the comment period for the proposed rule. The process of public review of this document provides an opportunity for comments on the information contained in this document, as well as for the provisions of additional information.

6.0 Draft Proposed Regulations

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

PART 665--FISHERIES IN THE WESTERN PACIFIC

1. The authority for part 665 reads as follows:

Authority: 16 U.S.C. 1801 et seq., 50 CFR part 600.310.

2. In part 665, add a new § 665.4 to read as follows:

§ 665.4 Annual Catch Limits.

(a) General. For each fishing year, the Regional Administrator shall specify an annual catch limit, including any overage adjustments, for each stock or stock complex of management unit species defined in Subparts B through F of this part, as recommended by the Council, and considering the best available scientific, commercial, and other information about the fishery for that stock or stock complex. The annual catch limit shall serve as the basis for invoking accountability measures in paragraph (f) of this section

(b) Overage adjustments. If landings of a stock or stock complex exceed the specified annual catch limit in a fishing year, the Council may recommend that the Regional Administrator reduce the annual catch limit for the subsequent year by the amount of the overage.

(c) Exceptions. The Regional Administrator is not required to specify an annual catch limit for a management unit species that is statutorily excepted from the requirement pursuant to 50 CFR 600.310(h)(2) or that the Council has identified as an ecosystem component species. The Regional Administrator will publish in the Federal Register the list of ecosystem component species, and will publish any changes to the list, as necessary.

(d) Annual Catch Target. For each fishing year, the Regional Administrator may also specify an annual catch target that is below the annual catch limit of a stock or stock complex, as

recommended by the Council. When used, the annual catch target, shall serve as the basis for invoking accountability measures in paragraph (f) of this section.

(e) Procedures and timing. (1) No later than 60 days before the start of a fishing year, the Council shall recommend to the Regional Administrator an annual catch limit for each stock or stock complex, including any overage adjustment. The recommended limit should be based on a recommendation by the SSC of the acceptable biological catch for each stock or stock complex. The Council may not recommend an annual catch limit that exceeds the acceptable biological catch recommended by the SSC. The Council may also recommend an annual catch target to be set below the annual catch limit.

(2) No later than 30 days before the start of a fishing year, the Regional Administrator shall publish in the Federal Register a notice of the proposed annual catch limit specification and any associated annual catch target, and request for public comment.

(3) No later than the start of a fishing year, the Regional Administrator shall publish in the Federal Register and use other methods to notify permit holders of the final annual catch limit specification and any associated annual catch target.

(f) Accountability measures. When any annual catch limit or annual catch target is projected to be reached, based on available information, the Regional Administrator shall publish a notice to that effect in the Federal Register and shall use other means to notify permit holders.

(1) The notice will include an advisement that fishing for that stock or stock complex will be restricted beginning on a specified date, which is not earlier than 7 days after the date of filing the notice for public inspection at the Office of the Federal Register. The restriction may include, but is not limited to, closure of the fishery, closure of specific areas, changes to bag limits, or restrictions in effort. The restriction will remain in effect until the end of the fishing year, except

that the Regional Administrator may, based on a recommendation from the Council, remove or modify the restriction before the end of the fishing year.

(2) It is unlawful for any person to conduct fishing in violation of the restrictions specified in the notification issued pursuant to paragraph (f)(1) of this section.

3. In § 665.12 add the definitions of "Ecosystem component species" and "SSC" in alphabetical order to read as follows:

* * * * *

Ecosystem component species means any western Pacific MUS that the Council has identified to be, generally, a non-target species, not determined to be subject to overfishing, approaching overfished, or overfished, not likely to become subject to overfishing or overfished, and generally not retained for sale or personal use.

* * * * *

SSC means the Scientific and Statistical Committee of the Western Pacific Fishery Management Council.

* * * * *

4. In **§** 665.15 add a new paragraph (u) to read as follows:

§ 665.15 Prohibitions.

* * * * *

(u) Fail to comply with the restrictions specified in the notification issued pursuant to § 665.4(f)(1), in violation of § 665.15(f)(2).

[This page left blank intentionally]

7.0 References

Aires-da-Silva, A. and M. Maunder. 2010. Status of Bigeye Tuna in the Eastern Pacific Ocean in 2008 and Outlook for the Future. Inter-Amer. Trop. Tuna Comm., Stock Assessment Report, 10: 116-228.

Brodziak, J. and G. Isimura. 2010. Stock Assessment of North Pacific Swordfish (*Xiphas gladius*) in 2009. Pacific Islands Fisheries Science Center, National Marine Fisheries Service, NOAA, Honolulu, HI 96822-2396. Pacific Islands Fisheries Science Center Administrative Report H-10-01, 37 p.

Brodziak, J., R. Moffitt, and G. DiNardo. 2009. Hawaiian Bottomfish Assessment Update for 2008. Pacific Islands Fish. Sci. Cent., Natl. Mar. Fish. Serv., NOAA, Honolulu, HI 96822-2396. Pacific Islands Fish. Sci. Cent. Admin. Rep. H-09-02.

Harley, S., S. Hoyle, P. Williams, J. Hampton, and P. Kleiber. 2010. Stock Assessment of Bigeye Tuna in the Western and Central Pacific Ocean. Western and Central Pacific Fisheries Commission, Scientific Committee, Sixth Regular Session, 10-19 August 2010, Nukualofa, Tonga. WCPFC-SC6-2010/SA-WP-4. 105 p.

Hinton, M. G. and M. N. Maunder. 2004. Status of Striped Marlin in the Eastern Pacific Ocean in 2002 and Outlook for 2003-2004. Inter-Amer. Trop. Tuna Comm., Stock Asses. Rep. 4: 287-310.

Hinton M. and Mark N. Maunder. 2007. Status of Swordfish Stock in the southeastern Pacific Ocean. Inter-Amer. Trop. Tuna Comm., Stock Asses. Rep. 7: 249-282.

Hoyle, S. and N. Davies. 2009. Stock Assessment of Albacore Tuna in the South Pacific Ocean. Western and Central Pacific Fisheries Commission, Scientific Committee, Fifth Regular Session, 10-19 August 2009, Port Villa Vanuatu. WCPFC-SC5/SA-WP-6. 133 p.

Hoyle, S., P. Kleiber, N. Davies, S. Harley, and J. Hampton. 2010 Stock Assessment of Skipujact Tuna in the Western and Central Pacific Ocean. Western and Central Pacific Fisheries Commission, Scientific Committee, Sixth Regular Session, 10-19 August 2010, Nukualofa, Tonga. WCPFC-SC6-2010/SA-WP-10 rev.1. 117 p.

International Scientific Committee for Tuna and Tuna-like Species in the North Pacific Ocean (ISC). 2006. Report of the Albacore Working Group Workshop. Annex 5. November 28-December 5, 2006. Shimizu, Japan. 72 p.

International Scientific Committee for Tuna and Tuna-like Species in the North Pacific Ocean (ISC). 2008. Report of the Pacific Bluefin Tuna Working Group Workshop. Annex 7. May 28-June 4, 2008. Shimizu, Japan. 67 p.

International Scientific Committee for Tuna and Tuna-like Species in the North Pacific Ocean (ISC). 2010. Report of the Pacific Bluefin Tuna Working Group Workshop. Annex 7. July 6-9, 2010. Nanaimo, Canada. 35 p.

Kleiber, P., M.G. Hinton, and Y. Uozumi. 2003. Stock assessment of Pacific blue marlin (Makaira nigricans) in the Pacific with MULTIFAN-CL. Mar. and Freshwater Res. 54(4):349-360.

Kleiber, P. S. Clarke, K. Bigelow, H. Nakano, M. McAllister, and Y. Takeuchi. 2009. North Pacific Blue Shark Stock Assessment. U.S. Department of Commerce, NOAA Tech. Memorandum, NOAA-TM-NMFS-PIFSC-17, 74 p.

Langley, A., S. Harley, S. Hoyle, N. Davies, J. Hampton, and P. Kleiber. 2009. Stock Assessment of Yellowfin Tuna in the Western and Central Pacific Ocean. Western and Central Pacific Fisheries Commission, Scientific Committee, Fifth Regular Session, 10-19 August 2009, Port Villa Vanuatu. WCPFC-SC5-2005/SA-WP-03. 121 p.

Langley, A. B. Molony, D. Bromhead, K. Yokawa and B. Wise. Stock Assessment of Striped Marlin (Terapturus audax) in the Southwest Pacific Ocean. Western and Central Pacific Fisheries Commission, Scientific Committee, Second Regular Session, 7-18 August 2006, Manila, Philippines. WCPFC-SC2-2006/SA-WP-6. 62 p.

Maunder, M.N. and Harley, S.J. 2005. Status of Skipjack Tuna in the Eastern Pacific Ocean in 2003 and Outlook for 2004. Inter-Amer. Trop. Tuna Comm., Stock Assessment Report, 5: 109-167.

Maunders, M. 2010. Updated Indicators of Stock Status for Skipjack Tuna in the Eastern Pacific Ocean. Inter-Amer. Trop. Tuna Comm., Stock Assessment Report, 10: 110-115.

Maunder, M. and A. Aires-da-Silva. 2010. Status of Yellowfin Tuna in the Eastern Pacific Ocean in 2008 and Outlook for the Future. Inter-Amer. Trop. Tuna Comm., Stock Assessment Report, 10: 3-109.

McCall, A.D. 2009. Depletion-Corrected Average Catch: a Simple Formula for Estimating Sustainable Yields in Data-Poor Situations. ICES Journal of Marine Science. 66: 2267-2271.

Moffitt R.B., J. Brodziak, Flores T. 2007. Status of the Bottomfish Resources of American Samoa, Guam, and Commonwealth of the Northern Mariana Islands, 2005. Pacific Islands Fish. Sci. Cent., Natl. Mar. Fish. Serv., NOAA, Honolulu, HI 96822-2396. Pacific Islands Fish. Sci. Cent. Admin. Rep. H-07-04, 52 p.

NMFS (National Marine Fisheries Service). 2005. Final Environmental Impact Statement: Seabird interaction avoidance methods and pelagic squid management. Fishery Management Plan for the Pelagic Fisheries of the Western Pacific Region. April 2005.

Nesis, K.N. 1993. Population Structure of Oceanic Ommastrephids, with Particular Reference to *Stenoteuthis oualaniensis*: A review. pp: 375-383 *In:* Okutani, T., R.K. O'Dor and T. Kubodera (Eds.) Recent Advances in Fisheries Biology. Tokai Univ. Press, Tokyo

Nigmatullin, C.M., A.I. Arkhipkin, and R.M. Sabirov. 1995. Age, Growth and Reproductive Biology of Diamond-shaped Squid *Thysanoteuthis rhombus* (Oegopsida: Thsanoteuthidae). Mar. Ecol. Prog. Ser. 124: 73-87.

Stocker, M. (ed). 2005. Report of the Nineteenth North Pacific Albacore Workshop. Nineteenth North Pacific Albacore Workshop, Nanaimo, B.C. Canada, November 25-December 2, 2004, Fisheries and Oceans, Canada, Pacific Biological Station, Nanaimo, B.C.

Theisen, T.C., B. W. Bowen, W. Lanier, and J. D. Baldwin. 2008. High Connectivity on a Global Scale in the Pelagic Wahoo, *Acanthocybium solandri* (tuna family Scombridae). Molecular Ecology, 17: 4233-4247.

Walters, C.J., V. Christensen, S.J. Martell, and J.F. Kitchell. 2005. Possible Ecosystem Impacts of Applying MSY Policies from Single-Species Assessments. ICES Journal of Marine Science, 62: 558-568.

WPFMC. 2009a. Fishery Ecosystem Plan for the American Samoa Archipelago. Western Pacific Fishery Management Council, Honolulu, Hawaii.

WPFMC. 2009b. Fishery Ecosystem Plan for the Hawaii Archipelago. Western Pacific Fishery Management Council, Honolulu, Hawaii.

WPFMC. 2009c. Fishery Ecosystem Plan for the Marianas Archipelago. Western Pacific Fishery Management Council, Honolulu, Hawai`i.

WPFMC. 2009d. Fishery Ecosystem Plan for the Pacific Remote Island Areas. Western Pacific Fishery Management Council, Honolulu, Hawaii.

WPFMC. 2009e. Fishery Ecosystem Plan for Pacific Pelagic Fisheries of the Western Pacific Region. Western Pacific Fishery Management Council, Honolulu, Hawaii.

WPFMC. 2009f. Final Programatic Environmental Impact Statement. Toward an Ecosystem Approach for the Western Pacific Region: From Species-Based Fishery Management Plans to Place-Based Fishery Ecosystem Plans. Western Pacific Fishery Management Council, Honolulu, Hawaii.

WPFMC. 2008. Ecosystem-Based Fisheries Management in the Western Pacific: Proceedings from a Comprehensive Series of Workshops Convened by the Western Pacific Fishery Management Council. Compiled by: Impact Assessment, Inc. Western Pacific Fishery Management Council, Honolulu, Hawaii.

WPFMC 2008b. Pelagics Annual Report. Western Pacific Fishery Management Council, Honolulu, Hawaii.

WPFMC 2008c. American Samoa Bottomfish Annual Report. Western Pacific Fishery Management Council, Honolulu, Hawaii.

WPFMC 2008d. Guam Bottomfish Plan Team Report. Western Pacific Fishery Management Council, Honolulu, Hawaii

WPFMC 2006. 2006 Black Coral Science and Management Workshop Report. Sponsored by WPFMC and Hawaii Division of Aquatic Resources.

WPFMC 2002. Magnuson-Stevens Act Definitions and Required Provisions – Overfishing Provisions. Amendment 6 to the Bottomfish FMP, Amendment 8 to the Pelagics FMP, and Amendment 10 to the Crustaceans FMP of the Western Pacific Region. Western Pacific Fishery Management Council. Associated FR Notice: 68 FR 46112.

WPFMC 2001. Final Fishery Management Plan for the Coral Reef Ecosystems of the Western Pacific Region. Western Pacific Fishery Management Council. Associated FR Notice: 69 FR 8336.

WPFMC 1998. Magnuson-Stevens Act Definitions and Required Provisions. Amendment 4 to the Precious Corals FMP. Western Pacific Fishery Management Council. Associated FR Notice: 64 FR 19067.

Yatsu, A., K. Hiramatsu and S. Hayase. 1993. Outline of the Japanese squid driftnet fishery with notes on the bycatch. Bull. Int. North Pacific Fisheries Commission, 53: 5-24.